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MASSACHUSETTS WATER RESOURCES AUTHORITY

Proposed Current Expense Budget Fiscal Year 1988

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December 10, 1986
Michael G. Gritzuk
Executive Director

Massachusetts Water Resources Authority

CURRENT EXPENSE BUDGET

FISCAL YEAR 1988

Michael G. Gritzuk
Executive Director
December 10, 1986

Prepared by:
Budget Department,
Administration and
Finance Division

Massachusetts Water Resources Authority

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Massachusetts Water Resources Authority

Proposed FY88 Current Expense Budget

EXECUTIVE SUMMARY

Introduction

The Massachusetts Water Resources Authority (the Authority) is empowered to operate, regulate, finance and improve the delivery of water and sewerage collection, treatment and disposal systems and services and to encourage conservation. These responsibilities are carried out under the direction of the Authority's Executive Director in accordance with statute and with policy determinations of the Board of Directors.

The Proposed FY88 Current Expense Budget of the Authority is hereby presented to the Authority's Board of Directors for its consideration and approval and to the Authority's Advisory Board for its review and comment pursuant to Section 8(b) of Chapter 372 of the Acts of 1984, the Authority's Enabling Act. The proposed budget was prepared by the MWRA Budget Department under the direction of the Director of Administration and Finance and the Authority's Executive Director. Each Division Director directed the development of the Division budget. Division budgets have been adjusted as a result of review and analysis during the budget preparation process.

Budget Summary

FY88 will mark the third year since the creation of the MWRA. During FY88, the Authority will largely complete the formation of an organization with the basic resources to carry out its mission. Increases in costs will occur in future years and they will be significant, driven by the need to maintain the water and sewer systems on which communities rely and by the additional expenses resulting from the Authority's capital improvement program. Cost increases in FY88, however, are relatively modest, as are required rate increases.

The Authority's Proposed FY88 Current Expense Budget sets forth \$106,994,848 in projected expenses, covered by an equivalent amount of projected revenue, 95.6% of which is required rate revenue. \$65.2 million of projected expenses, 61% of the budget total, are direct expenses of the Authority's seven divisions. A summary of those expenses, by line item and Division is given on page 5. The total revenue and expense budget for the Authority is given on the following page.

Massachusetts Water Resources Authority
Proposed Current Expense Budget
Fiscal Year 1988

Revenue Line Items

Rate Revenue Requirements	\$ 102,234,848
Contract Income	1,560,000
Investment Income	3,000,000
Other Income	<u>200,000</u>
Total Revenue	\$ 106,994,848

Expense Line Items

Wages and Salaries	31,617,657
Overtime	1,866,721
Fringe Benefits	3,784,880
Workers' Compensation	<u>426,000</u>

Total Labor Costs	37,695,258
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Chemicals	4,407,665
Utilities and Energy	5,925,102
Ongoing Maintenance	3,170,293
New Maintenance	1,632,564
Education, Training & Meetings	520,435
Professional Services	4,177,698
Other Materials	1,905,130
Other Services	<u>5,797,459</u>

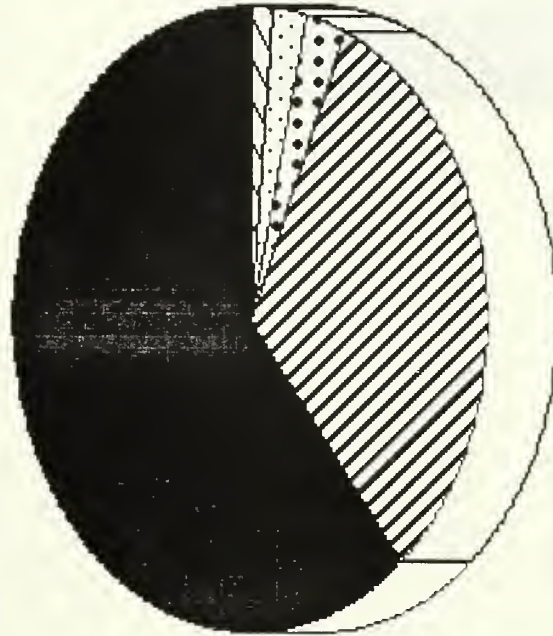
Total Direct Expenses	65,231,604
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Insurance	1,620,283
Watershed Reimbursement	2,476,000
Debt Service	34,816,847
Additions to Reserves	<u>2,850,114</u>

Total Expenses	<u>\$ 106,994,848</u>
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MWRA FY88 CURRENT EXPENSE SUMMARY OF EXPENSE

DIRECT EXPENSE 61.0%

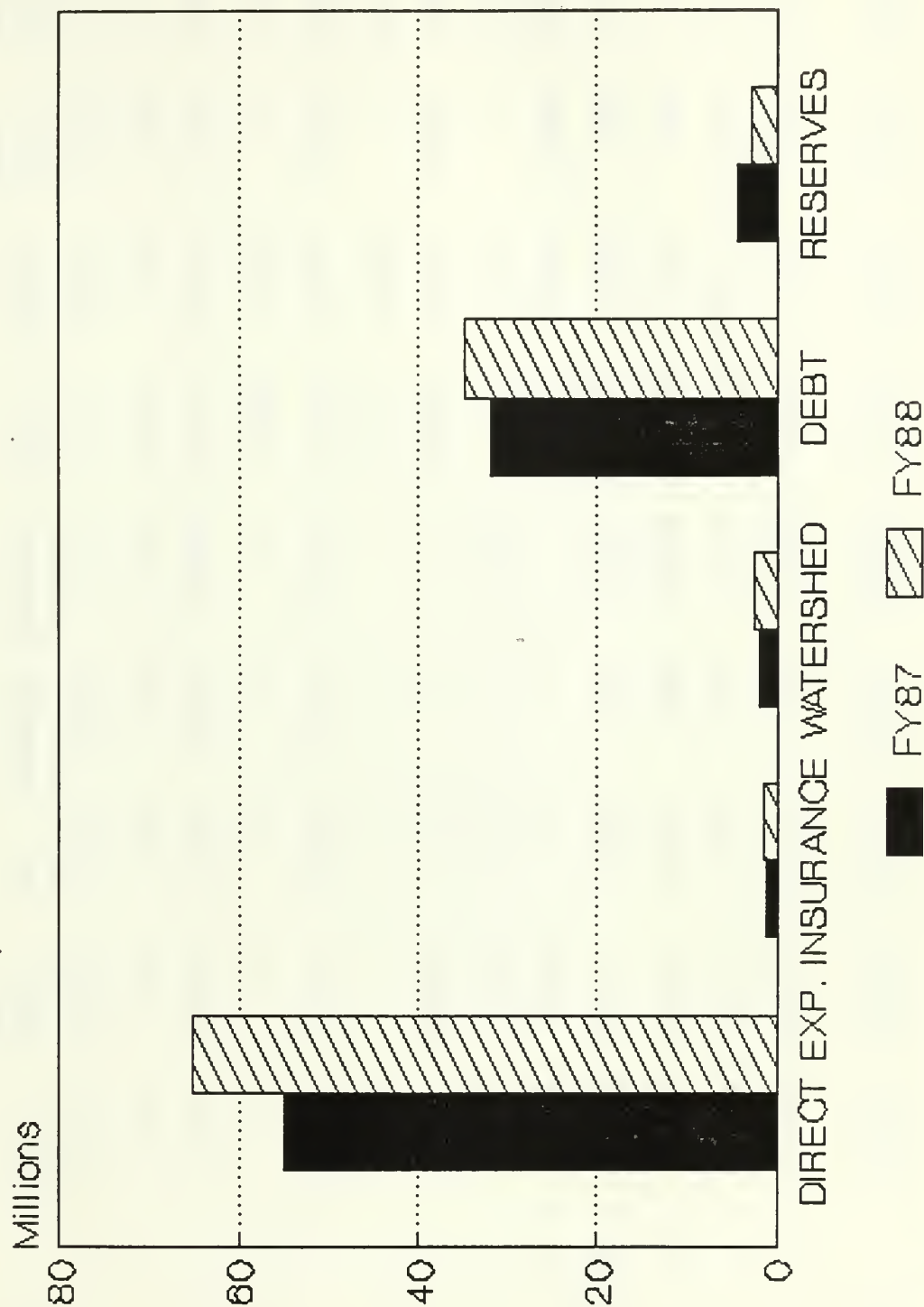


INSURANCE 1.5%
WATERSHED 2.3%
ADD. TO RESERVES 2.7%

DEBT SERVICE 32.5%

MWRA CURRENT EXPENSE BUDGET

FY87 & FY88 COMPARISON



MASSACHUSETTS WATER RESOURCES AUTHORITY

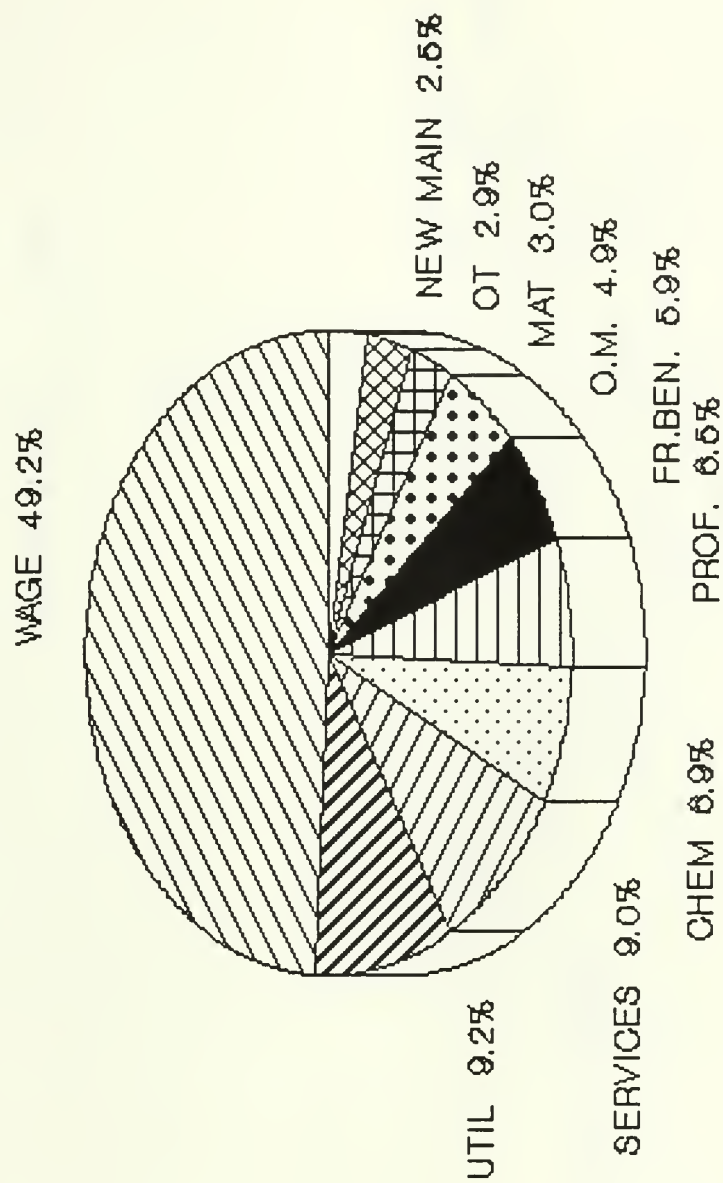
PROPOSED DIRECT EXPENSE BUDGET

FISCAL YEAR 1988

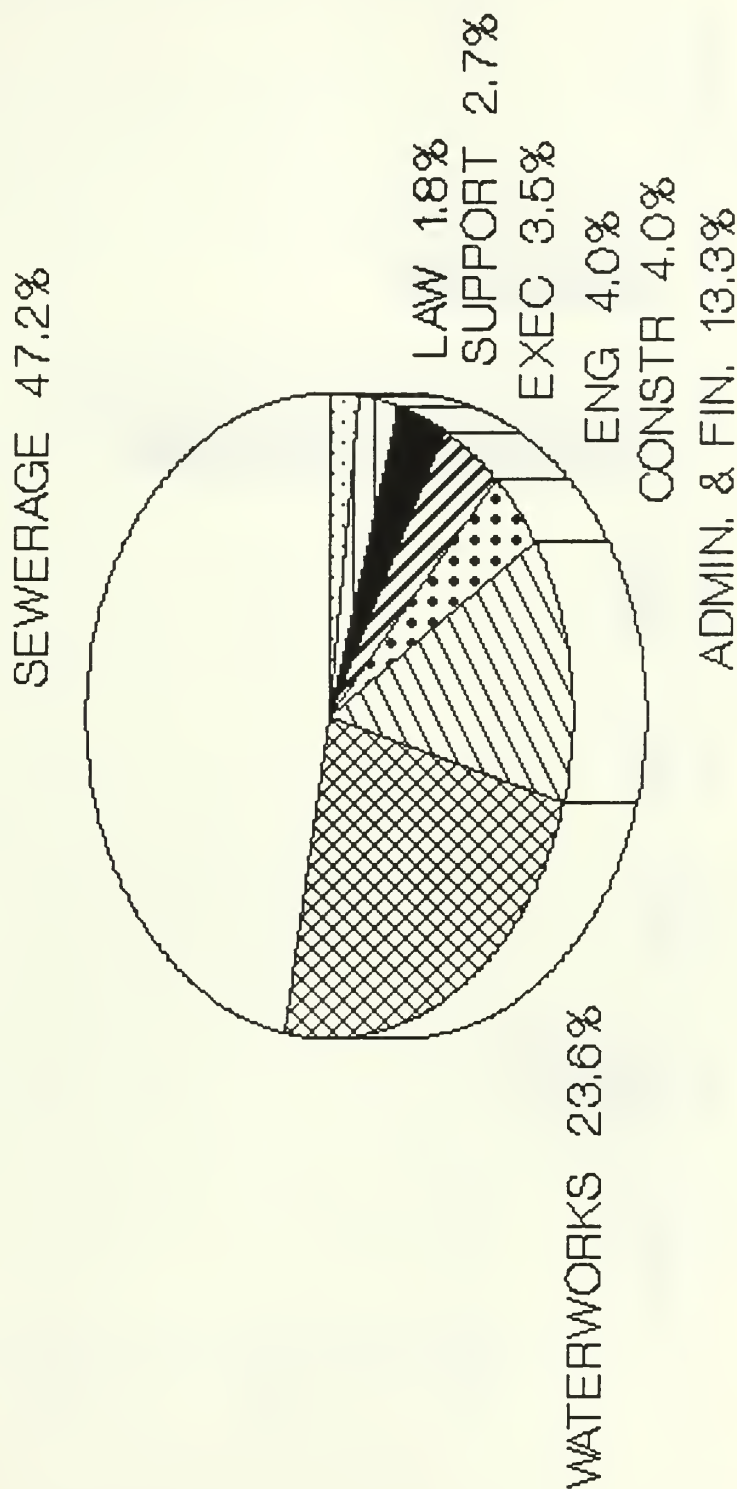
EXPENSE LINE ITEMS	EXECUTIVE	ADMIN. & FINANCE	LAW	ENGINEERING	CONSTRUCTION	SEWERAGE	WATERWORKS	SUPPORT SERVICES	TOTAL AUTHORITY
WAGES AND SALARIES	\$1,352,777	\$3,106,117	\$768,581	\$2,206,999	\$1,959,132	\$13,269,561	\$8,336,974	\$617,516	\$31,617,657
OVERTIME	\$20,554	\$72,576	\$7,500	\$42,705	\$30,284	\$1,276,245	\$407,217	\$9,640	\$1,866,721
FRINGE BENEFITS	\$128,601	\$383,273	\$55,969	\$180,289	\$154,335	\$1,727,720	\$1,095,748	\$58,945	\$3,784,880
WORKERS' COMPENSATION	\$0	\$0	\$0	\$0	\$0	\$293,000	\$133,000	\$0	\$426,000
TOTAL LABOR COSTS	\$1,501,932	\$3,561,966	\$832,050	\$2,429,993	\$2,143,751	\$16,566,526	\$9,972,939	\$686,101	\$37,695,258
CHEMICALS	\$0	\$0	\$0	\$0	\$0	\$3,391,582	\$1,016,083	\$0	\$4,407,665
UTILITIES & ENERGY	\$0	\$250,000	\$0	\$0	\$0	\$4,024,461	\$1,540,641	\$110,000	\$5,925,102
ONGOING MAINTENANCE	\$0	\$139,700	\$0	\$0	\$10,000	\$2,251,513	\$769,000	\$0	\$3,170,293
NEW MAINTENANCE	\$0	\$42,550	\$0	\$0	\$0	\$380,714	\$739,300	\$470,000	\$1,632,564
EDUCATION, TRAINING & MEETINGS	\$146,770	\$104,775	\$13,575	\$53,300	\$31,150	\$99,125	\$64,090	\$7,650	\$520,435
PROFESSIONAL SERVICES	\$309,600	\$1,328,100	\$250,000	\$50,000	\$200,000	\$1,415,148	\$584,850	\$40,000	\$4,177,698
OTHER MATERIALS	\$28,030	\$545,190	\$29,500	\$59,640	\$146,625	\$651,394	\$394,981	\$49,770	\$1,905,130
OTHER SERVICES	\$298,534	\$2,718,925	\$16,850	\$14,410	\$107,000	\$1,979,780	\$290,310	\$371,650	\$5,797,459
TOTAL DIRECT EXPENSES	\$2,284,866	\$8,691,206	\$1,141,975	\$2,607,343	\$2,638,526	\$30,760,243	\$15,372,274	\$1,735,171	\$65,231,604

MWRA FY88 DIRECT EXPENSE BUDGET

DIRECT EXPENSE BY LINE ITEM

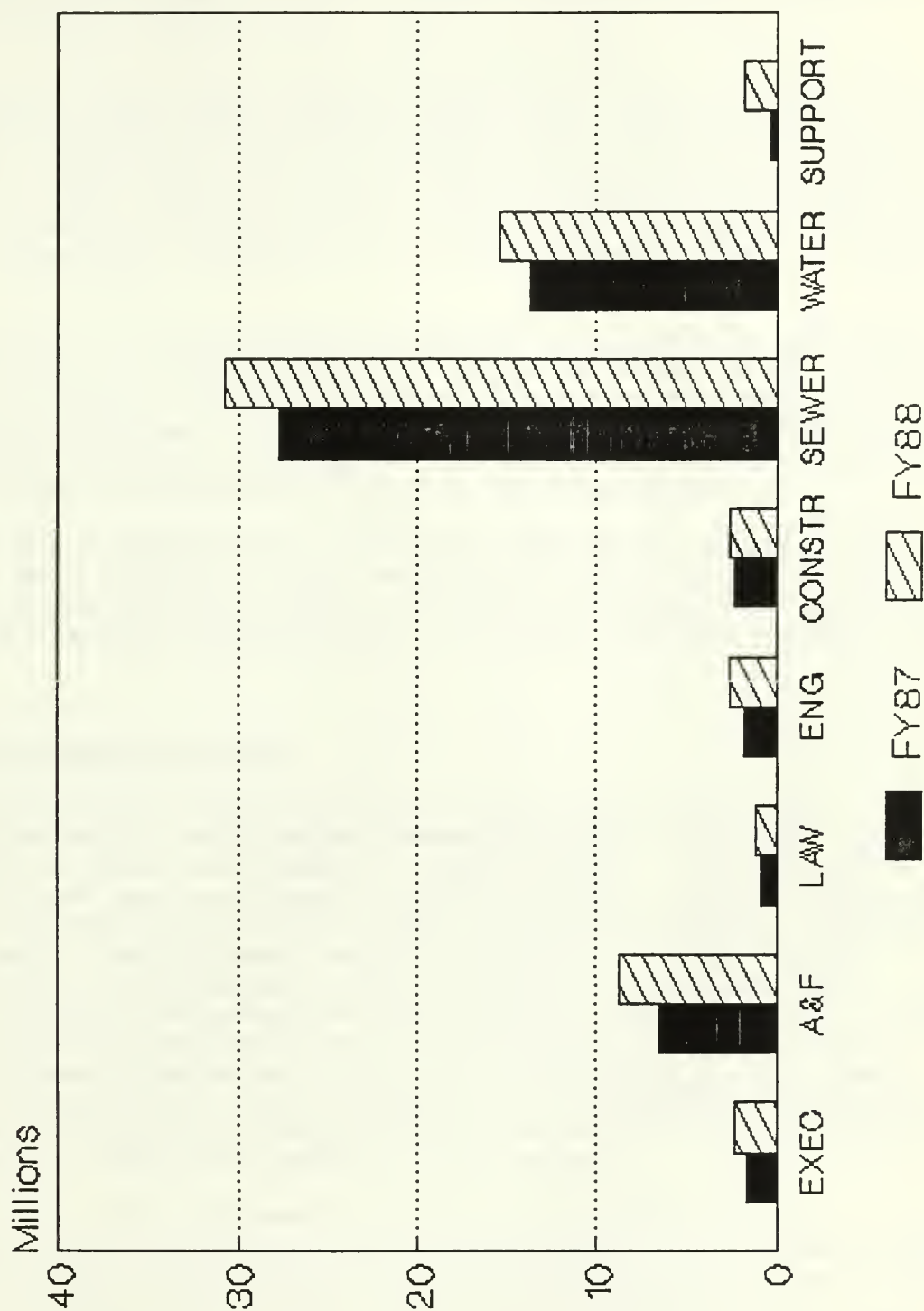


MWRA FY88 CURRENT EXPENSE BUDGET DIRECT EXPENSE BY DIVISION



MWRA DIRECT EXPENSE BUDGET

FY87 & FY88 COMPARISON BY DIVISION



Charts on the previous pages show allocations of the Authority's resources to the components of the organization responsible for its various functions and to the line item expense categories. They also compare the proposed budget to the current expense budget adopted in FY87.

The total proposed costs of the Authority are \$12,546,961 or 13.3% greater than those approved for FY87. Direct costs of the Authority's operations and maintenance activities will increase 18.6%. The increase is driven by the 25.2% in added personnel costs; all other direct expense categories are 10.6% higher in FY88. The cost of labor is once again a major expense category for the Authority, increasing to 57.8% of direct costs in FY88 from 54.7% in FY87.

The Authority's waterworks and wastewater operations use both energy and chemicals intensively. Together they account for more than 15% of direct expenses. Budgeted amounts are based on projections of price and usage, both of which are subject to some degree of uncertainty. The price assumptions used to arrive at budgeted costs are outlined later in this document.

Most indirect expenses have increased from FY87, and each is discussed more fully in later sections of the document. The cost of debt service is \$34,816,847, up only 8.9% from FY87 and comprising a smaller proportion of the total budget than it did in FY87.

Rate Revenue Requirements

The Proposed FY88 Current Expense Budget sets forth rate requirements which, with other revenue of the Authority, are sufficient to cover all budgeted expenditures. Readers of this proposed budget are cautioned that the budget proposal will be reviewed and refined over the three months of December, January and February. During that period, some of the revenue and expense numbers may change. In particular, the Executive Director has not yet presented the costs of the Authority's new water policy initiatives to the Board of Directors, and full costs of those policies may not be included in this proposed budget. In addition, the reorganization of several departments in the Waterworks and Sewerage Divisions may change the number of positions for which the Authority must plan.

The Authority will ultimately establish its charges in conformance with statutory requirements after full review of the proposed budget by the Board of Directors and the Advisory Board and after holding public rate hearings. An estimate of preliminary charges will be sent to each community before the end of February based on usage data for each community, the costs outlined in this proposed budget and any changes to it which may

occur over the next few months. Any community's charges could vary significantly from the average rate requirements presented in this budget.

As set forth in this proposed Current Expense Budget, the Authority's FY88 rate revenue requirements are \$102.2 million, \$32,613,188 for costs of the water system and \$69,621,660 for costs of the sewer system. These requirements represent a combined rate increase from FY87 of 12.7%. The required sewer rate increase is 15.3%; the required water rate increase is 7.5%. These rate increases are considerably lower than those of the previous two years and lower than those projected for fiscal years 1989 and 1990.

There are three primary reasons for the relief from large rate increases in this year. Sharp increases in costs over the past two years have included additional expenses of organizing the Authority and providing it with basic resources (including staff resources) so that it could independently carry out the activities previously performed by the MDC and the Commonwealth of Massachusetts, increase the level of effort in systems maintenance and improve operations. Much of the increased cost of building that capability is now built into the budget. Additional major increases of the magnitude required in previous years are not required in FY88. A second reason that FY88 rate increases can be moderated is that the Authority's capital improvement program has a small impact on current expenses in FY88. The third reason is that inflation increases during FY88 are projected to be modest. Projections of future increases, however, indicate that this year's relief from significant rate increases will not continue, and that the Authority's customers should plan for much higher rate increases in the future due primarily to implementation of the Authority's capital construction program.

Costs of the Authority have been allocated to either the water or sewer systems in accordance with generally accepted accounting principles. All budgeted expenses directly attributable to costs of the sewerage system (direct expenses of the Sewerage Division) and the waterworks system (direct expenses of the Waterworks Division and costs of Watershed reimbursement and payments in lieu of taxes) are used to determine an allocation ratio for expenditures not directly attributable to one system or the other. In the proposed FY88 Current Expense Budget, directly attributable amounts total \$48.6 million, 67.3% of Authority costs exclusive of debt service. The sewerage system costs are 63% of the total; waterworks system costs are 37% of the total.

These proportions are used to allocate costs of other direct expenses, insurance costs and additions to reserves to the waterworks or sewerage systems. Costs of debt service are allocated based upon the purposes for which debt has been or is expected to be issued.

Massachusetts Water Resources Authority

Proposed FY88 Current Expense Budget

BUDGET OVERVIEW

Major FY88 MWRA Management Objectives

The Executive Director has outlined the following major management objectives for the Authority for FY88:

- o Continue development of a "management by objectives" program;
- o Develop project management systems to implement the Authority's capital improvement program;
- o Implement a strategic plan for acquisition and management of Authority information systems;
- o Complete staffing of the Authority's divisions; provide training and support for all personnel;
- o Implement short and long-range water policies;
- o Meet court schedule milestones and deadlines;
- o Develop CSO Control Program and cost allocations;
- o Strengthen industrial waste monitoring in accordance with Authority regulations;
- o Perform internal audits;
- o Provide for public participation in major Authority programs;
- o Continue to develop systems and procedures for purchasing and inventory control, contracting and administrative services;
- o Implement centralized maintenance of vehicles;
- o Perform selected operations analysis studies;
- o Continue implementation of affirmative action and MBE/WBE policies; strengthen outreach programs;
- o Prepare long-term financing plan and prepare for the Authority's entry into the bond market;

- o Develop aggressive programs to maximize grant and other funding source revenue; and,
- o Continue implementation of mitigation agreements with impacted communities.

Budget Preparation and Presentation

The Authority's Proposed FY88 Current Expense Budget follows by less than a year the development of an operating budget for fiscal year 1987 and the formulation of a proposed three year capital improvement program. The FY88 current expense budget maintains the same organizational format as the previous year. Cost categories which reflect the major areas of Authority expenses remain identical. Cost centers which are accountable for proposed activities and the management of resources to support those activities follow the Authority's reorganized structure. No changes to the chart of accounts are proposed.

The major new objective in the budget preparation process for FY88 was to lengthen the time horizon for planning operations and maintenance activities in order to provide estimates of future current expenses and future rate requirements. Those estimates are given in the following section of this budget document.

For FY87 the Authority's current expense budget was built from a zero base, in part because the structural reorganization and the change in cost categories required an analysis of all proposed activities and requested resources. The creation of a new Authority and the hiring of an Executive Director also presented the opportunity to look at all resource needs from a fresh perspective and to document and evaluate each area of expenditure. Some of the costs in FY87 were one-time or infrequent expenditures required to correct years of underfunding and to equip the new Authority to perform its tasks. Other costs supported the higher levels of effort for which the Authority was created.

The formulation and presentation of the FY88 budget follows a different set of budget guidelines. The FY88 budget is presented in two parts. The first is a base budget, needed to continue activities and programs included in FY87. The second is an incremental budget which presents the cost of new initiatives, some of which will continue on an annual basis and some of which will not recur each year.

PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

AUTHORITY TOTAL DIRECT EXPENSES

EXPENSE LINE ITEM:	FY87 APPROVED BUDGET	FY88 BASE BUDGET	% CHANGE FROM FY87	FY88 INCREMENTAL BUDGET	% OF FY87 BUDGET	FY88 TOTAL BUDGET	% CHANGE FROM FY87
WAGES AND SALARIES	25,491,382	29,681,986	16.4%	1,766,602	6.9%	31,617,657	24.0%
OVERTIME	1,924,650	1,857,441	-3.5%	9,280	0.5%	1,866,721	-3.0%
FRINGE BENEFITS	2,438,946	3,784,880	55.2%	0	0.0%	3,784,880	55.2%
WORKERS' COMPENSATION	245,910	426,000	73.2%	0	0.0%	426,000	73.2%
TOTAL LABOR AND BENEFIT COST	\$30,100,888	\$35,750,307	18.8%	\$1,775,882	5.9%	\$37,695,258	25.2%
CHEMICALS	4,128,171	4,401,176	6.6%	6,489	0.2%	4,407,665	6.8%
ENERGY AND UTILITIES	5,846,324	5,812,422	-0.6%	112,680	1.9%	5,925,102	1.3%
ONGOING MAINTENANCE	2,639,412	3,061,293	16.0%	109,000	4.1%	3,170,293	20.1%
NEW MAINTENANCE	2,045,839	0	-100.0%	1,632,564	79.8%	1,632,564	-20.2%
EDUCATION, TRAINING, & MEETINGS	419,985	450,075	7.2%	70,360	16.8%	520,435	23.9%
PROFESSIONAL SERVICES	3,075,170	3,130,213	1.8%	1,047,485	34.1%	4,177,698	35.9%
OTHER MATERIAL	2,115,953	1,718,330	-18.8%	186,800	8.8%	1,905,130	-10.0%
OTHER SERVICES	4,619,291	5,322,459	15.2%	475,000	10.3%	5,797,459	25.5%
TOTAL DIRECT EXPENSES	\$54,991,033	\$59,646,274	8.5%	\$5,416,260	9.8%	\$65,231,603	18.6%

Revenue Budget

The Authority's rate revenue is 95.6% of total revenue. Contract income is derived from any contracts the Authority succeeded to in law or may enter into for the provision of water or sewer services. The projected income is \$1,560,000, a 4% increase from the amount projected for FY87. Revenue from water contracts is not a number which can be estimated with certainty because it depends on actual future water use by those with whom the Authority contracts for service.

Investment income is earned on certain operating and reserve fund balances. Anticipated income in FY87 is \$3 million. This amount has been reduced from the amount of income anticipated for FY87 because both interest rates and the average balance of funds invested are projected to be lower in FY88.

Other income includes all fines, deposit forfeitures, and fees collected by the Authority. While it is anticipated that the Authority will derive such income in FY88, it is not possible at this time to predict the amount with an acceptable degree of accuracy to warrant inclusion in the budget of an amount higher than \$200,000.

Personnel Costs

The additional \$7,594,370 budgeted for personnel is 60.5% of the total budget increase proposed for FY88. The amount is made up of the following components:

Annualized FY87 Staff Costs	\$ 3,008,051
FY88 Cost of New Positions	1,631,242
Increased Fringe & Workers Comp	1,526,024
6% Wage Increase	1,356,554
Differential, Holiday & Temporary Employees	130,428
Decrease in Overtime	<u>(57,929)</u>
	\$ 7,594,370

The \$3 million increase for annualized FY87 staff brings total budgeted costs for FY87 staff positions to \$27,419,927. This amount is documented in the Authority's Position Control Register dated December, 1986 as the annual cost of all positions listed. As monthly updates of the register occur, the annualized cost of FY87 positions may change. The January position control register will be the basis for the wage costs upon which the February preliminary estimates of community charges will be calculated.

The incremental cost of \$1.6 million covers partial year wages for positions not included in the FY87 budget. The 87 additional positions to be filled in FY88 will bring total Authority

staffing to 1,279. On the following pages are bar charts showing planned hires per month and pie charts showing additional and total personnel by Division. The Appendix contains additional information on proposed additional personnel.

\$1.4 million has been included in the budget for wage increases. The amount is 6% of budgeted wages, shift differential, holiday pay and overtime. It assumes that all wages and salaries for the Authority will be 6% higher on average at January 1, 1988 than those contained in the December position control register. The increases will result from position reclassifications, step increases, merit increases and any changes in wage rates which might result from new collective bargaining agreements.

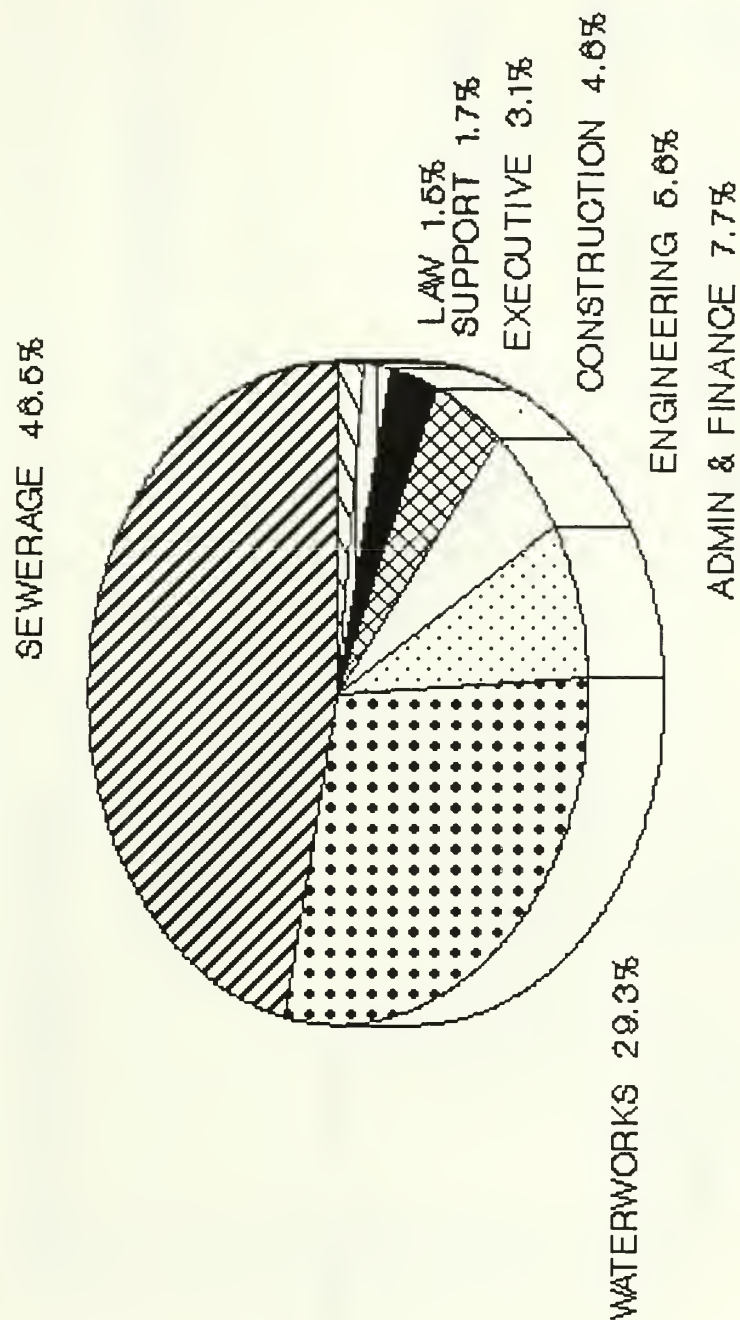
Costs of personnel benefits are projected to increase from FY87 due to a higher average staffing level and to price increases. Employee benefits include overtime meal allowances, health insurance, dental insurance, a health and welfare contribution and unemployment insurance. The State Insurance Commission projects health insurance increases of 8% for family plans and 7% for individual plan members in FY88. The Authority pays 90% of the cost of employee health insurance. The Authority pays the full cost of dental insurance for employees not covered by collective bargaining agreements and contributes \$4 per week to a Health and Welfare Fund for each employee covered by a collective bargaining agreement. Delta Dental, the dental plan insurance carrier, projects no increase in cost for the plan in FY88. Budgeted amounts for employee benefits have been calculated based on the budgeted staff costs outlined above.

Costs for Workers' Compensation are included in the Sewerage and Waterworks Division. The Personnel Department has recommended increases in this budget for FY88 in light of experience with current claims, medical payments and potential settlements. The budgeted amounts are included only in the two operating Divisions; any cost incurred for staff of another Division will be covered by a budget reallocation.

The additional \$60,700 budgeted for temporary employees covers the costs of temporary clerical positions and laborers and the expense of the Authority's participation in cooperative education programs sponsored by area universities and colleges. The Personnel Department is establishing a structured program to take advantage of cooperative education opportunities. Cooperative education programs are valuable to students who gain work experience. They also benefit the Authority which gains additional personnel resources while encouraging talented young people to pursue professions and jobs in the areas which match the Authority's current and future labor market needs. These costs for FY87 were included in the budget of the Affirmative Action Unit. For FY88, each Division has specified its individual uses for co-op students.

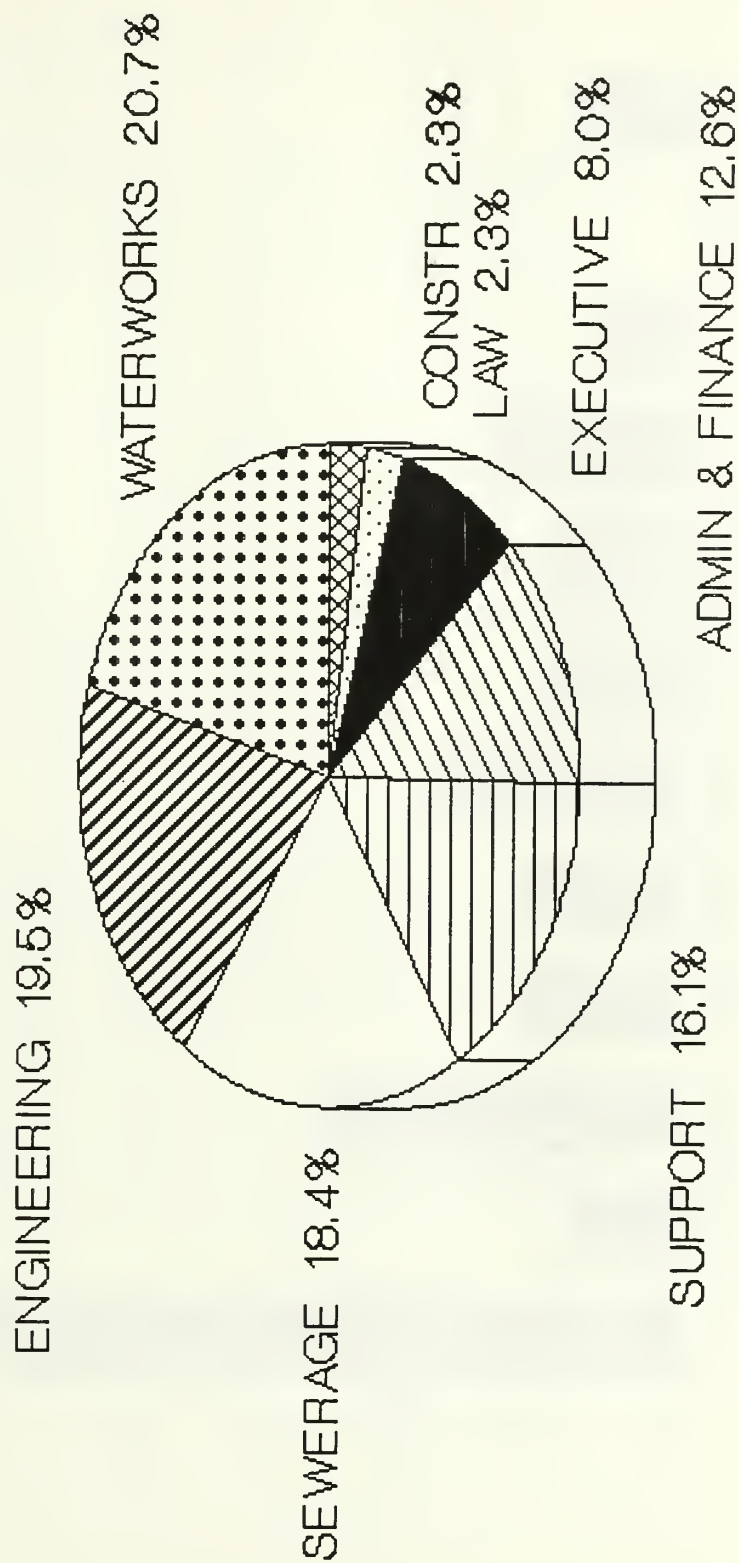


MWRA FY88 BUDGETED PERSONNEL TOTAL PERSONNEL BY DIVISION



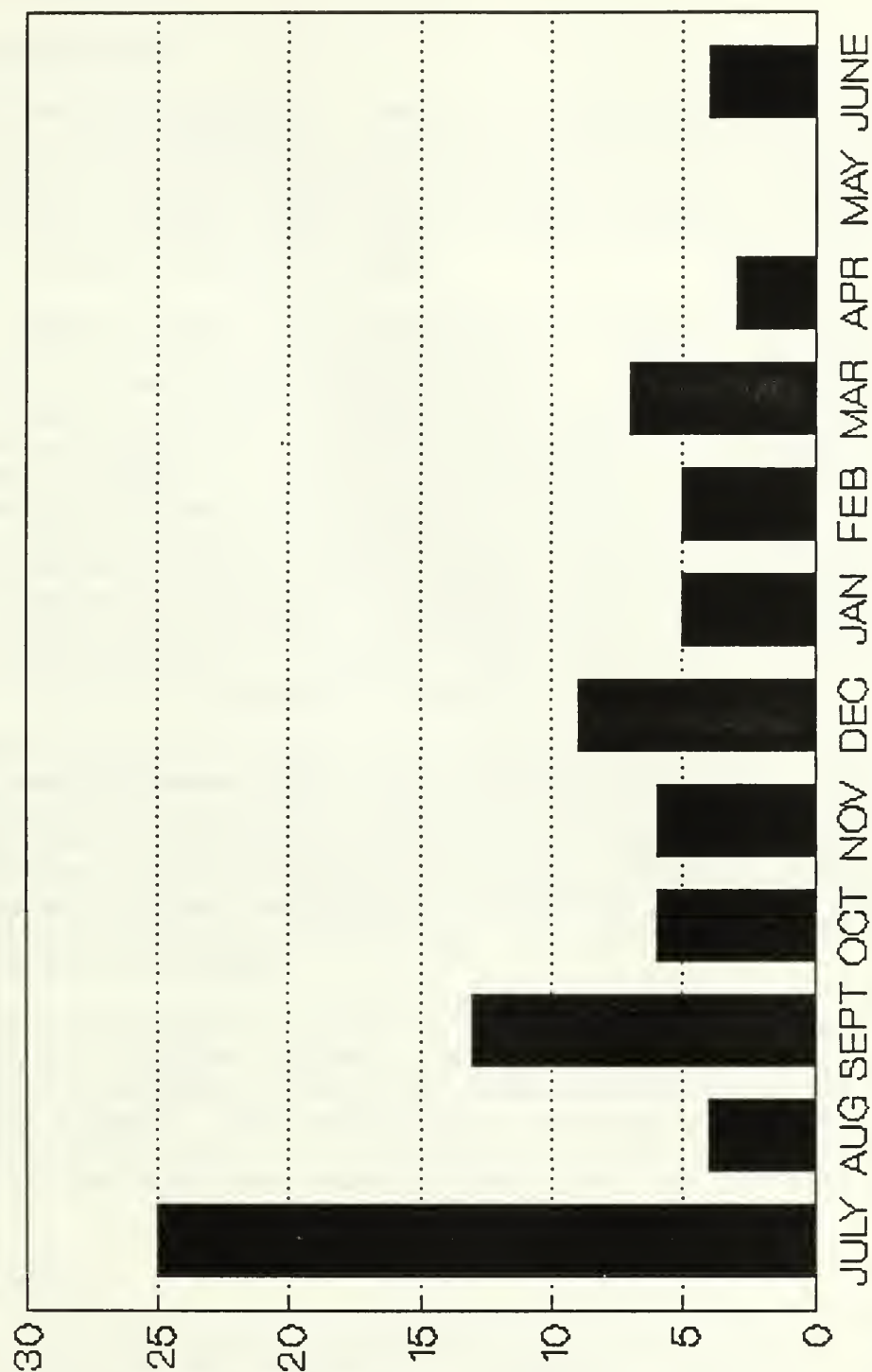
MWRA PERSONNEL HIRING PLAN

NEW PERSONNEL POSITIONS PER DIVISION



MWRA PERSONNEL HIRING PLAN

HIRES BY MONTH



The Authority's overtime budget is 3% lower in FY88. The specific increases and decreases are outlined in the narratives for each Division.

Other Direct Costs

Usage levels for chemicals, energy and utilities have been projected by each Division. Chemical prices paid during the first quarter of FY87 have been inflated by 3% in the calculation of projected costs for FY88. The largest portion of the chemical budget is for chlorine, the cost of which has been projected to average \$408 per ton during FY88.

The two largest items in the Authority's budget for energy and utilities are fuel oil and electricity. Electric costs have been budgeted at 9.5 cents per kilowatt hour, a slight increase from the price used in the FY87 budget and from current prices. Fuel oil has been budgeted at 90 cents per gallon, the same price used for the FY87 budget. Fuel oil is currently costing the Authority between 40 and 50 cents per gallon, significantly less than the price assumptions used for budgeting. The volatility of world petroleum markets, the recently stated objective of OPEC to stabilize petroleum prices at a higher level and the significant fuel oil usage by the Authority suggest that it is most prudent for the Authority not to assume a lower price for petroleum products in the FY88 proposed budget.

The proposed Authority budget for Education, Training and Meetings has increased just over \$100,000 from FY87. The FY87 budget allotted to each Division Director a limited amount to allow Division staff to participate in national, regional or local seminars or conferences; to augment skills through attendance at courses, seminars or training programs, and to pay costs of business related meetings. Authority sponsored training costs were also included.

The increase from FY87 to FY88 is due primarily to the inclusion of amounts in Division budgets for the Authority's tuition reimbursement program. Costs for this program were not included in the FY87 budget. Some additional training programs have also been proposed for FY88 and are described in the narrative sections of the Division budgets where they are planned.

Indirect Costs

Insurance costs have been projected by the risk management staff with the advice of the Authority's insurance advisor. Costs include the estimated expense of property and casualty insurance premiums and brokers' fees, the estimated cost of Officers and Director's Liability coverage, the estimated cost of a Surety Bond for self insurance of Workers' Compensation costs, and the estimated cost of property and casualty losses payable in FY88.

The line item for Watershed Reimbursement contains amounts which the Authority is required by statute to advance to the MDC for payments in lieu of taxes to certain towns in the Quabbin and Ware River Watersheds. Those amounts are estimated to be \$590,000 in FY88. The line item also contains mandated reimbursements to the MDC for certain costs of operating the Watershed Division of that agency. Those costs are estimated to be \$1,886,000 in FY88.

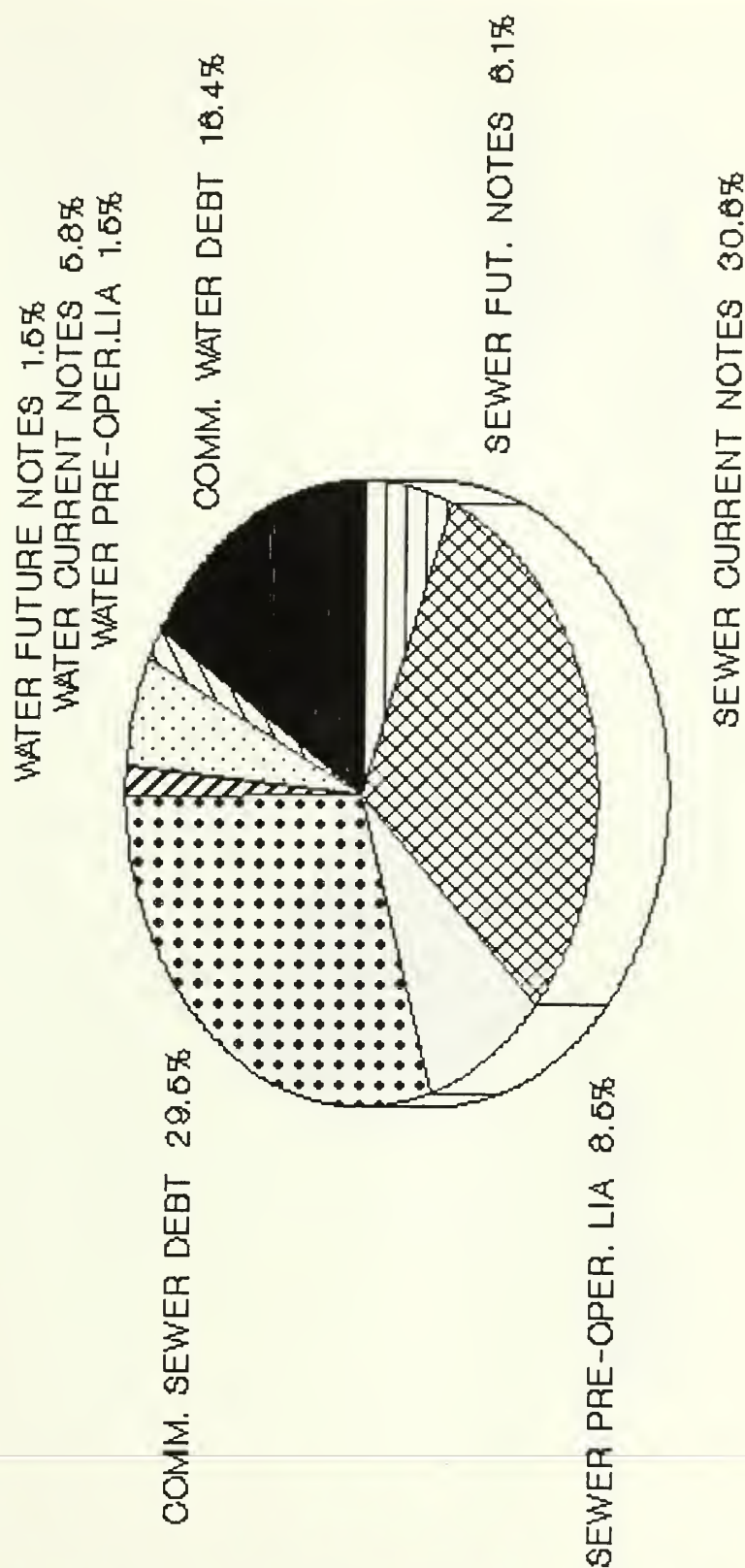
All Authority debt service is paid as a current expense of the Authority. Those costs total \$34,816,847 in FY88. Debt service for bonds issued by the Commonwealth to pay for improvements to the water and sewer systems includes both principal and interest. Debt service for bond anticipation notes (BANS) issued by the Authority in calendar 1986 covers interest only for Series A notes and both interest and \$5 million of principal for Series B notes. Additional notes will be required to fund the capital program prior to permanent financing by the Authority. Based on the projected cash flow contained in the Proposed Capital Facilities Program and Budget, the Treasurer suggests two additional notes of \$50 million each with a projected interest rate of 5.25%. Budgeted costs assume that the first note will be issued in September, 1987 (CY87 Series A) and the second in April, 1988 (CY88 Series A). The proceeds are expected to be allocated 80% to the sewer system and 20% to the water system.

Additional debt service amounts are budgeted in FY88 for the pre-operational liability of the Authority. Pre-operational liability combines the Waterworks and Sewerage operating deficits from years prior to January 1, 1985 and the repayment of the amount borrowed to finance the six month transitional period between January 1, 1985 and July 1, 1985. The total pre-operational liability is \$35,043,000. Proposed legislation provides for payment of this liability in ten annual installments of \$3,504,300, and the FY88 budget includes the first of those payments. The allocation between water and sewer is based on the portion of the operating deficit attributable to each system.

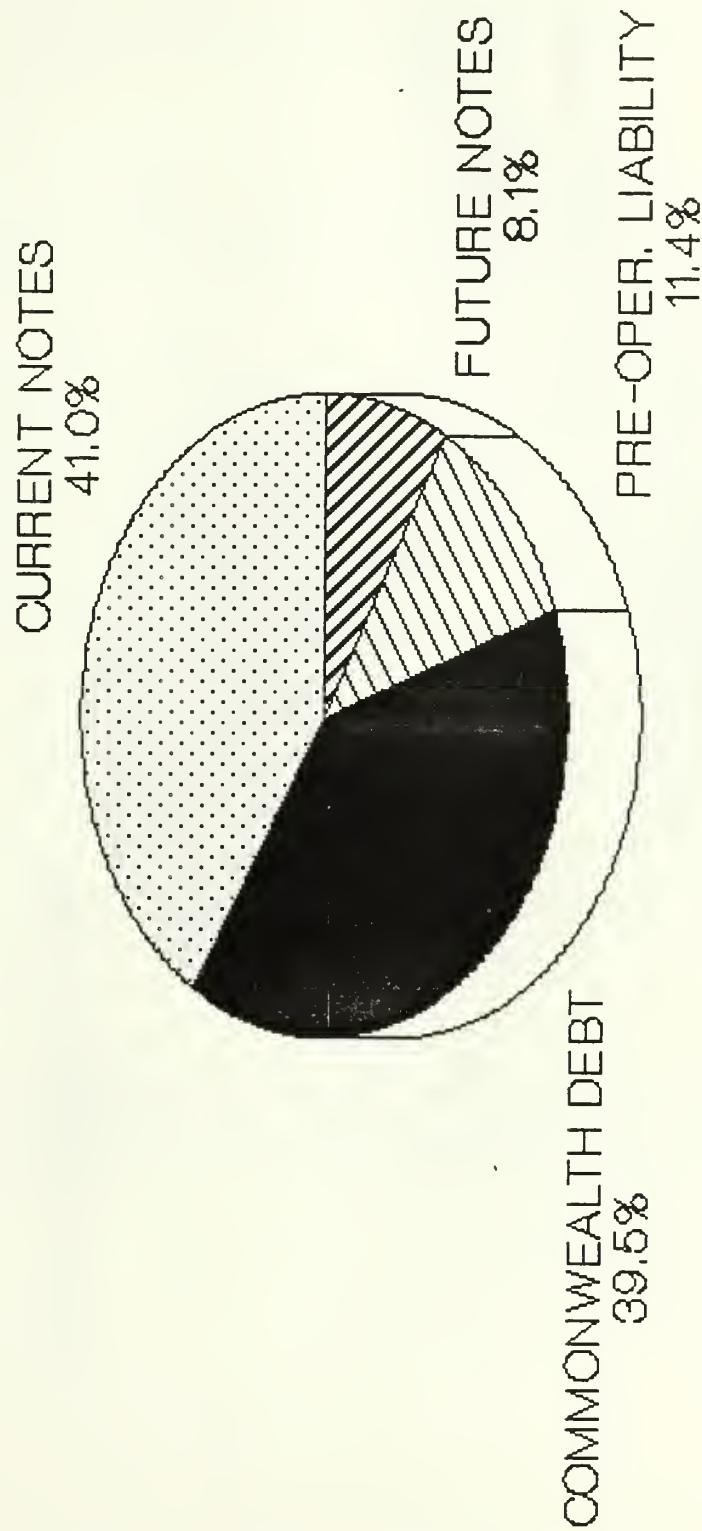
The debt service schedule and allocations are shown below.

<u>Type of Debt</u>	<u>Water</u>	<u>Sewer</u>	<u>Total</u>
Commonwealth Bonds	\$ 5,705,877	\$ 10,275,392	\$ 15,981,269
Pre-Operational Liability	536,194	2,968,134	3,504,328
Current Notes			
CY86 Series A	940,681	2,996,819	3,937,500
CY86 Series B	1,075,453	7,668,297	8,743,750
Future Notes			
CY87 Series A	400,000	1,600,000	2,000,000
CY88 Series A	<u>130,000</u>	<u>520,000</u>	<u>650,000</u>
	\$ 8,788,205	\$26,028,642	\$ 34,816,847

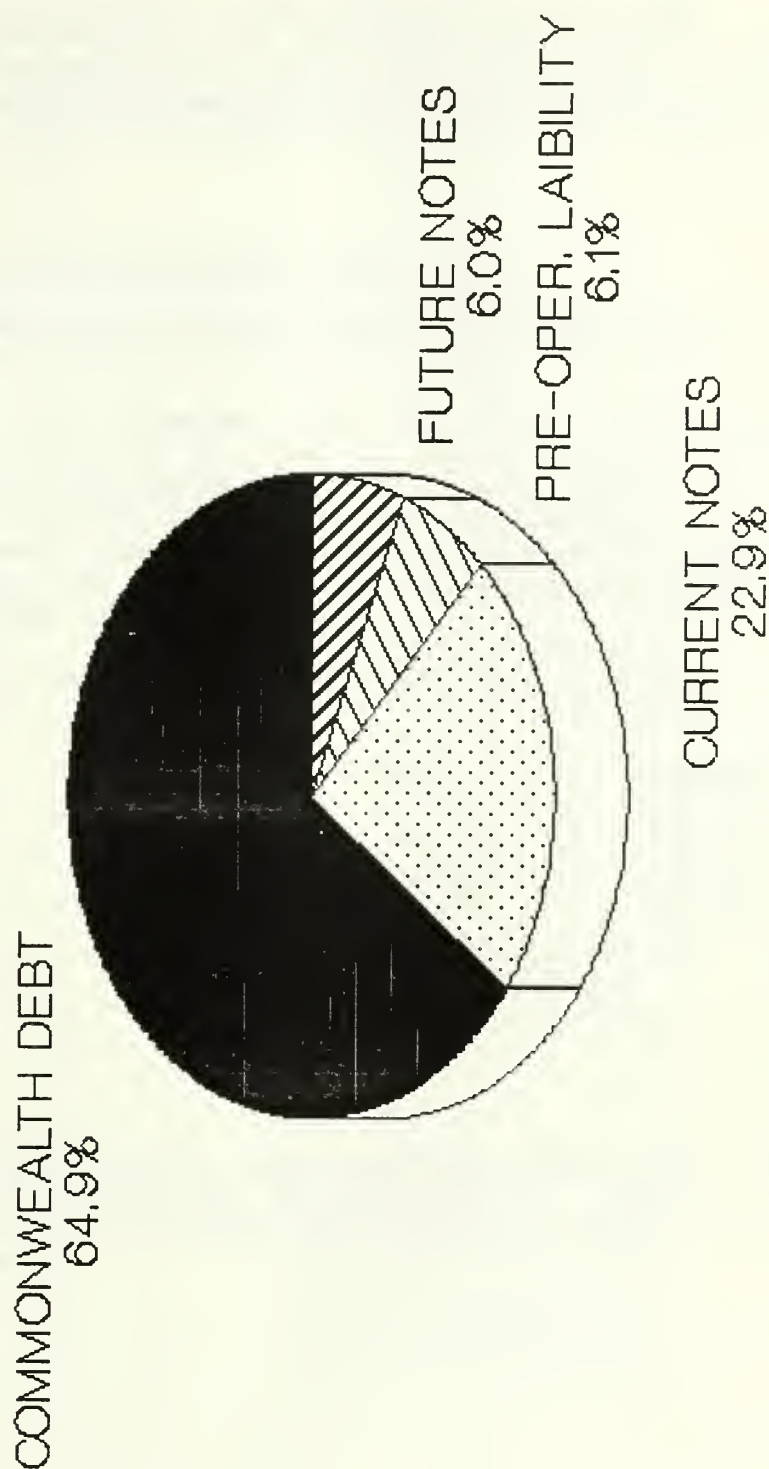
MWRA FY88 DEBT SERVICE PAYMENTS DISTRIBUTION OF DEBT PAYMENTS



MWRA FY88 DEBT SERVICE PAYMENTS DISTRIBUTION OF SEWER DEBT PAYMENTS



MWRA FY88 DEBT SERVICE PAYMENTS DISTRIBUTION OF WATER DEBT PAYMENTS



Additions to reserves are \$2.9 million, a significant reduction from the \$4.3 million of FY87. The additions are to the Authority's Pension Reserve and to the Operating Reserve. The Operating Reserve requirement is 20% of the Authority's direct costs. As direct costs increase from one year to the next, 20% of the increase is budgeted in order to maintain the Operating Reserve level.

Projected Revenue and Expenditures: FY89, FY90

The following two pages show revenue and expenditure levels for the four years fiscal year 1987 through fiscal year 1990.

The chart indicates the increases proposed in this budget and those projected over the next two years. Direct costs will increase by the highest percentage in FY89, as capital improvement projects impact operations and maintenance costs. Indirect costs increase each year, with the largest percentage rise occurring in FY90 for debt service and the full impact of funding a debt coverage reserve.

Required rate revenue increases are projected as follows:

	<u>Water</u>	<u>Sewer</u>	<u>Combined</u>
FY87 to FY88	7.5%	15.3%	12.7%
FY88 to FY89*	17.6%	32.9%	28.1%
FY89 to FY90*	19.2%	32.1%	28.3%

*These estimates are rough approximations based on information currently available. Organizational, financial, and other changes could have a substantial impact on these preliminary estimates.

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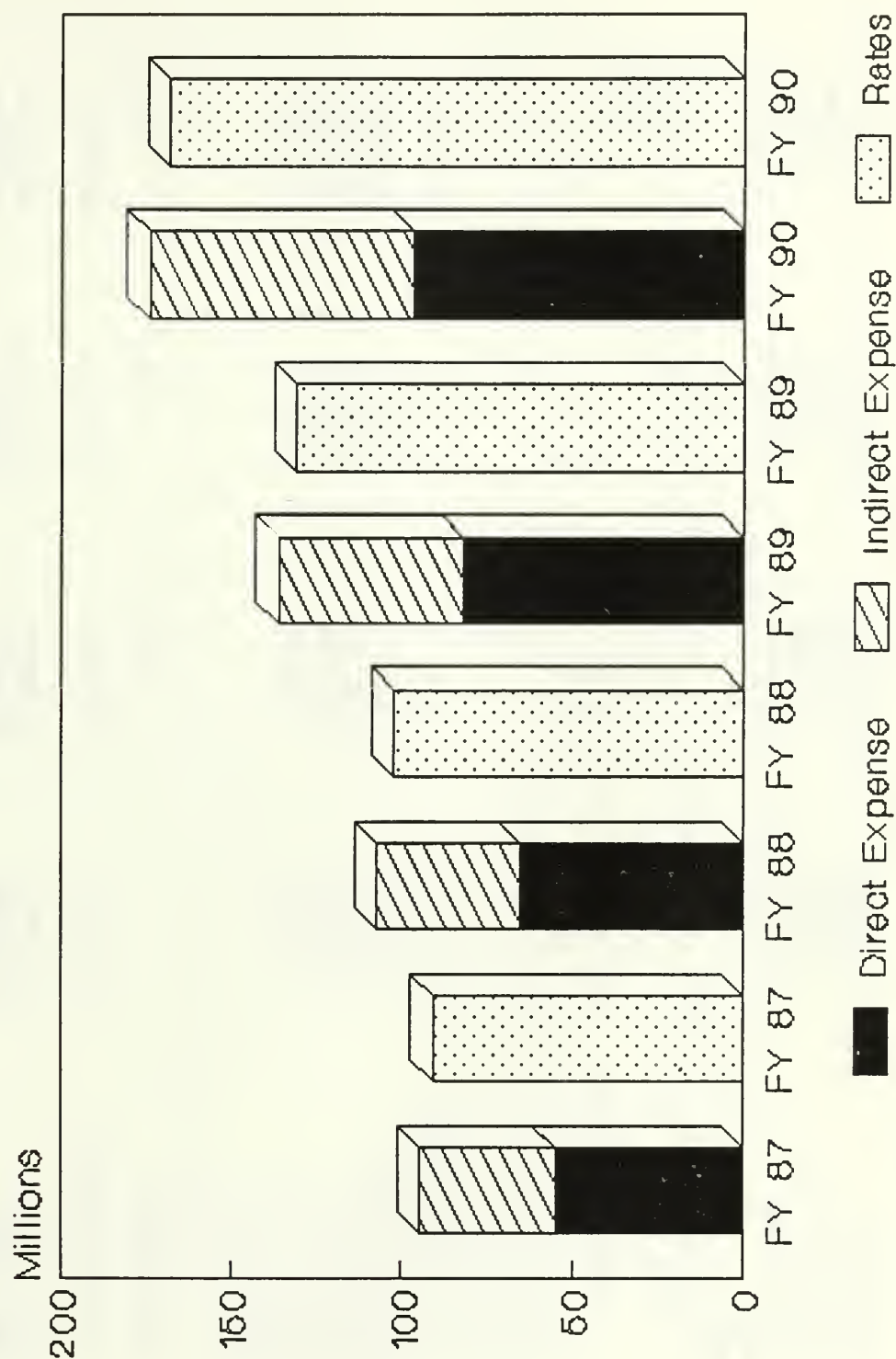
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RATE & EXPENSE INCREASES

FY88 - FY90



MASSACHUSETTS WATER RESOURCES AUTHORITY
EXPENDITURE AND RATE PROJECTIONS - FY1988, FY1989, FY1990

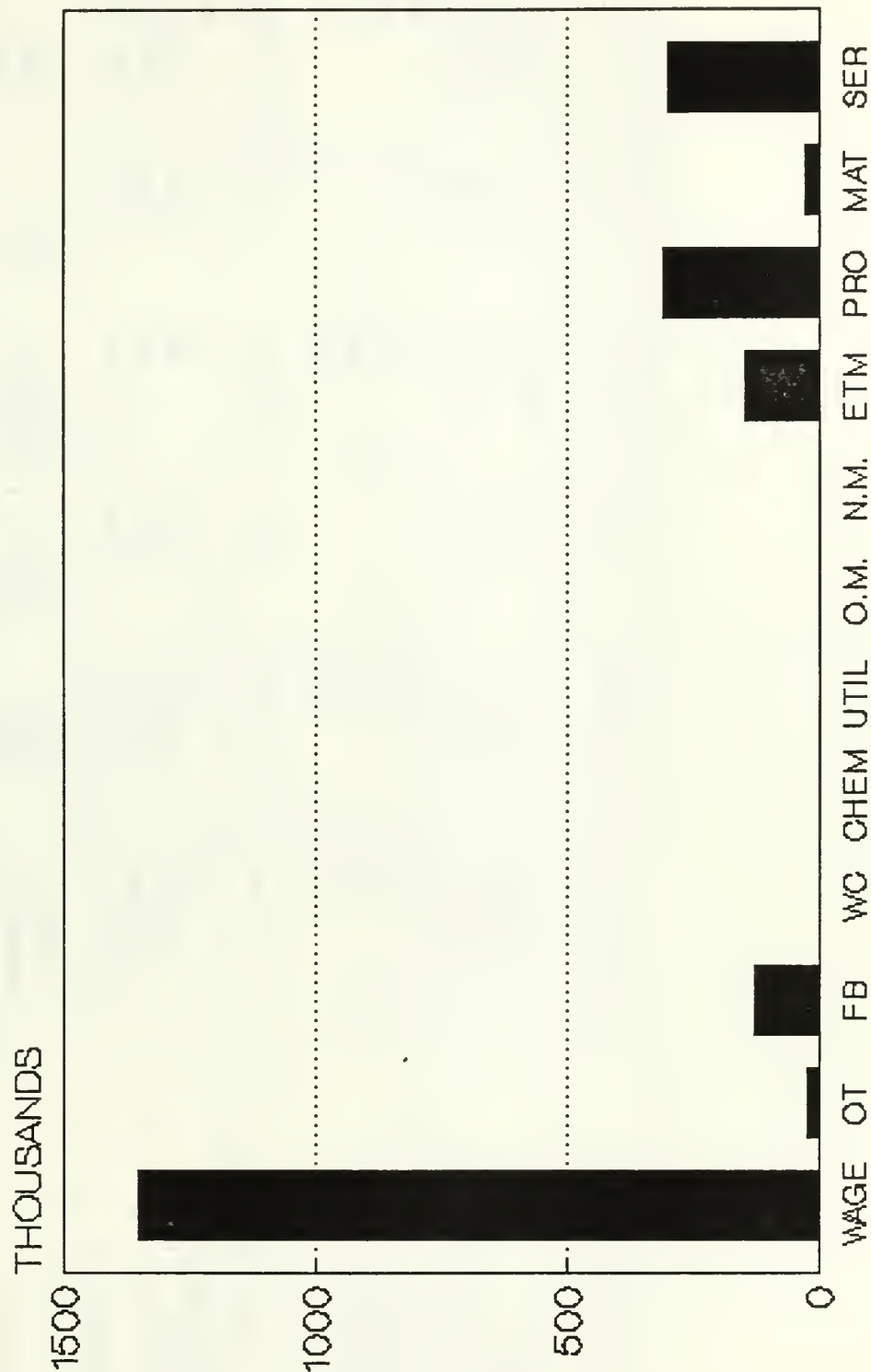
	FY87	FY88	FY89	FY90
DIRECT COSTS				

WATERWORKS DIVISION	\$13,657,723	\$15,372,274	\$17,289,399	\$19,588,376
SEWERAGE DIVISION	\$27,762,629	\$30,768,243	\$43,415,087	\$52,889,640
ALLOCATED DIVISIONS	\$13,570,682	\$19,099,087	\$21,414,916	\$23,955,178
TOTAL DIRECT EXPENSES	\$54,991,034	\$65,231,604	\$82,119,401	\$96,425,195
ANNUAL INCREASE		18.62%	25.89%	17.42%
INDIRECT COSTS				

INSURANCE	\$1,190,800	\$1,620,283	\$1,766,108	\$1,925,058
WATERSHED & PILOT	\$1,958,000	\$2,476,000	\$2,598,840	\$2,941,736
DEBT SERVICE	\$31,984,981	\$34,816,847	\$43,389,438	\$60,000,000
ADDITIONS TO RESERVES	\$4,323,072	\$2,850,114	\$6,377,559	\$12,861,159
TOTAL INDIRECT EXPENSES	\$39,456,853	\$41,763,244	\$54,231,946	\$77,727,953
ANNUAL INCREASE		5.85%	29.86%	43.33%
TOTAL CURRENT EXPENSES	\$94,447,887	\$106,994,848	\$136,351,347	\$174,153,147
ANNUAL INCREASE		13.28%	27.44%	27.72%
REVENUE				

CONTRACT INCOME	\$1,500,000	\$1,560,000	\$1,640,000	\$1,750,000
INVESTMENT INCOME	\$3,500,000	\$3,000,000	\$3,500,000	\$4,000,000
OTHER INCOME	\$200,000	\$200,000	\$300,000	\$400,000
RATE REVENUE	\$90,725,802	\$102,234,848	\$130,911,347	\$168,003,147
REQUIRED RATE INCREASE		12.69%	28.05%	28.33%

MWRA FY88 CURRENT EXPENSE BUDGET EXECUTIVE BY LINE ITEM



THE UNIVERSITY OF CHICAGO
LIBRARY

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PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

EXECUTIVE

EXPENSE LINE ITEM:	FY87 APPROVED BUDGET	FY88 BASE BUDGET	% CHANGE FROM FY87	FY88 INCREMENTAL BUDGET	% OF FY87 BUDGET	FY88 TOTAL BUDGET	% CHANGE FROM FY87
WAGES AND SALARIES	\$1,030,694	\$1,185,777	15.0%	\$167,000	16.2%	\$1,352,777	31.2%
OVERTIME	\$27,835	\$20,554	-26.2%	\$0	0.0%	\$20,554	-26.2%
FRINGE BENEFITS	\$65,555	\$128,601	96.2%	\$0	0.0%	\$128,601	96.2%
WORKERS' COMPENSATION	\$0	\$0		\$0		\$0	
TOTAL LABOR AND BENEFIT COST	\$1,124,084	\$1,334,932	18.8%	\$167,000	14.9%	\$1,501,932	33.6%
CHEMICALS	\$0	\$0		\$0		\$0	
ENERGY AND UTILITIES	\$0	\$0		\$0		\$0	
ONGOING MAINTENANCE	\$0	\$0		\$0		\$0	
NEW MAINTENANCE	\$0	\$0		\$0		\$0	
EDUCATION, TRAINING, & MEETINGS	\$115,950	\$146,770	26.6%	\$0	0.0%	\$146,770	26.6%
PROFESSIONAL SERVICES	\$127,100	\$259,600	104.2%	\$50,000	39.3%	\$309,600	143.6%
OTHER MATERIAL	\$61,540	\$28,030	-54.5%	\$0	0.0%	\$28,030	-54.5%
OTHER SERVICES	\$216,850	\$228,534	5.4%	\$70,000	32.3%	\$298,534	37.7%
TOTAL DIVISION BUDGET	\$1,645,524	\$1,997,866	21.4%	\$287,000	17.4%	\$2,284,866	38.9%



PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988
EXECUTIVE

EXPENSE LINE ITEM:	EXECUTIVE OFFICE	INTERNAL AUDIT	PUBLIC AFFAIRS	AFFIRMATIVE ACTION	BOARD OF DIRECTORS	AUTHORITY ADVISORY BOARD	TOTAL
IMAGES AND SALARIES	\$327,166	\$315,500	\$416,111	\$251,000	\$43,000		\$1,352,777
IOVERTIME	\$8,250	\$900	\$3,760	\$2,964	\$4,680		\$20,554
IIFRINDE BENEFITS	\$128,501	\$0	\$0	\$0	\$100		\$128,601
IWORKERS' COMPENSATION	\$0	\$0	\$0	\$0	\$0		\$0
ITOTAL: LABOR AND BENEFIT COST	\$463,917	\$316,400	\$419,871	\$253,964	\$47,780		\$1,501,932
ICHEMICALS	\$0	\$0	\$0	\$0	\$0		\$0
IUTILITIES AND ENERGY	\$0	\$0	\$0	\$0	\$0		\$0
IONGOING MAINTENANCE	\$0	\$0	\$0	\$0	\$0		\$0
IINEN MAINTENANCE	\$0	\$0	\$0	\$0	\$0		\$0
IIEUCATION, TRAINING, & MEETINGS	\$19,000	\$16,695	\$47,250	\$33,825	\$30,000		\$146,770
IIPROFESSIONAL SERVICES	\$150,000	\$50,000	\$85,000	\$15,000	\$9,600		\$309,600
IIOOTHER MATERIAL	\$8,392	\$0	\$10,538	\$6,160	\$2,940		\$28,030
IIOOTHER SERVICES	\$25,000	\$0	\$69,400	\$85,134	\$19,000	\$100,000	\$298,534
II							
II							
II TOTAL PROPOSED BUDGET	\$666,309	\$383,095	\$632,059	\$394,083	\$109,320	\$100,000	\$2,284,866



Proposed FY88 Current Expense Budget

EXECUTIVE

Executive Budget Summary

The Executive budget includes funds for the Office of the Executive Director and the units of Public Affairs and Internal Audit which report to the Executive Director. The Executive budget also contains funds for the Authority's Affirmative Action Unit, for expenses of the Board of Directors and for expenses of the MWRA Advisory Board. Expenses in the Executive area are 3.5% of the Authority's total direct expenses. Labor costs make up 65.7% of the total Executive area budget, and their increase accounts for most of the \$639,342 in additional costs over FY87. The other major cost increase is in the professional services line item.

Wages and Salaries

The incremental portion of the wage and salary cost category is for two additional employees in the Affirmative Action Unit to monitor consultant and contractor payroll compliance with affirmative action requirements and for an additional five positions in the Internal Audit Unit.

The cost of the Authority's cooperative education program has been decentralized, with each Division budgeting for its specific needs. In FY87, the cost of the program was included primarily in the Affirmative Action Unit.

Overtime

The base budget for overtime in the Public Affairs Unit has been reduced by \$8,840.

Education, Training and Meetings

The increase in this category is primarily in the Internal Audit Unit. \$4,500 of the increase is for tuition reimbursement. The remaining portion of the increase is for training programs for the audit staff (\$7,400) and a slight addition in funds for seminars. The budget in Public Affairs also is increased to account for costs of public meetings and to include \$3,000 for tuition reimbursement.

Professional Services

\$132,500 of the increase in this line item is an adjustment to the base. It includes a transfer of \$100,000 from the Authority's proposed capital budget for the Executive Board of Advisors and additional funds for audit consulting services in the Internal Audit Unit.

The incremental increases are for new programs in FY88 which will become part of the base budget in FY89. The first is \$35,000 in the Public Affairs Unit to hire consultants. The consultants will do market or public opinion research on selected issues in order to help the Authority design public education programs for such things as sludge and water resources management. Such research is now performed by consultants as subcontractors on capital program contracts. It is often more useful and less expensive for the Authority to contract directly for such work. The other incremental portion of the budget is \$15,000 for a consultant to design and implement workshops and seminars for Authority management and supervisory staff on equal opportunity, human relations and affirmative action.

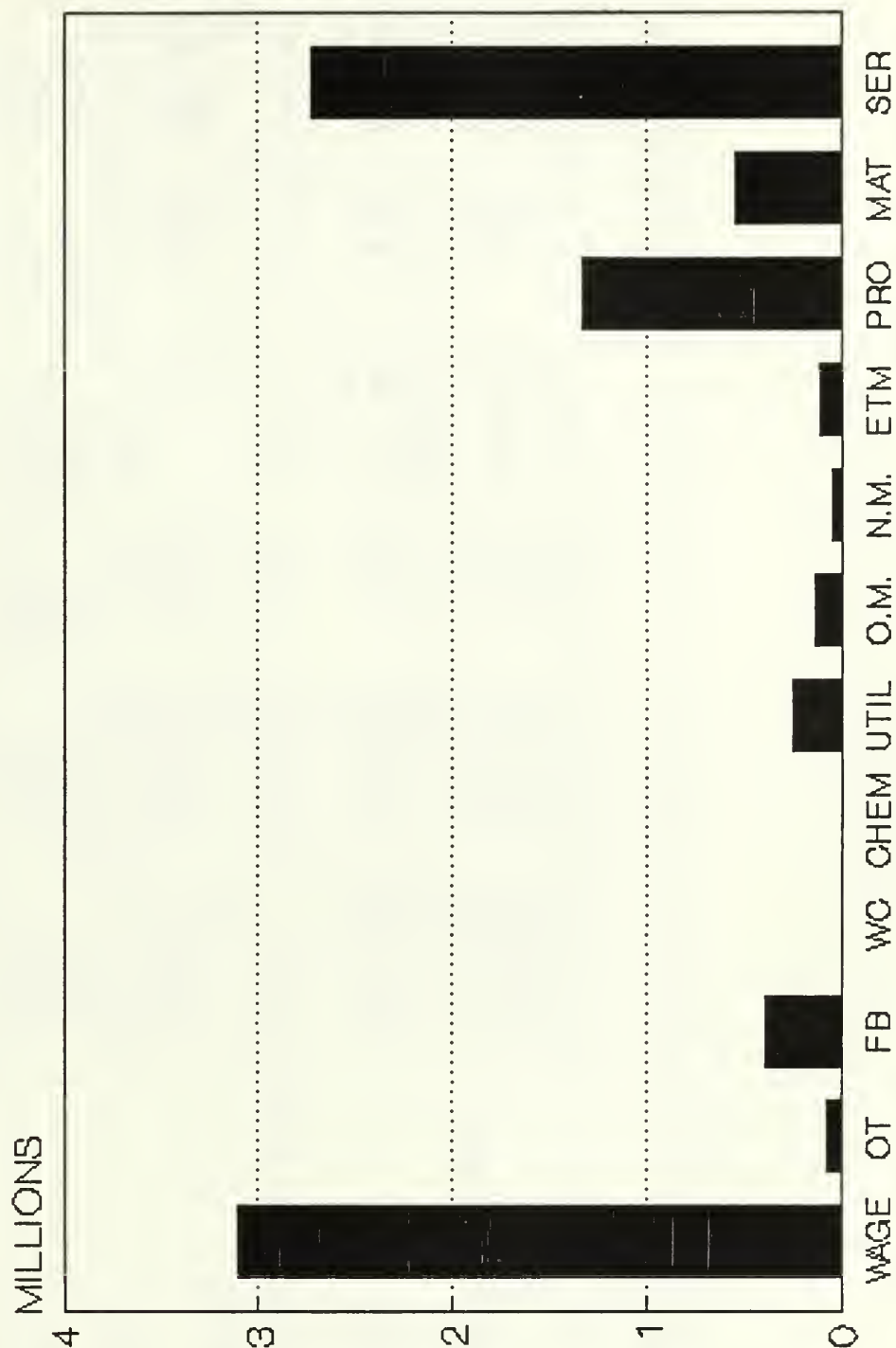
Other Materials

The decrease in this budget is due to removing one time or start up costs from the base.

Other Services

The incremental portion of this budget is all located in the Affirmative Action Unit. It includes \$1,000 to provide access to electronic data bases on the current labor market and labor market trends, \$20,000 for advertising in minority and women trade journals, \$25,000 for a technical assistance program and \$24,000 for conferences. The technical assistance program will be jointly developed with other public and private agencies to provide assistance to small minority and women contractors in obtaining surety bonding. All participants will share in the cost. The conference budget will provide \$10,000 for co-sponsorship with EPA and the Commonwealth for outreach conferences for MBE and WBE firms; \$6,000 to host four workshops on MWRA prequalification, bonding and related contract requirement issues, and \$8,000 to organize and implement quarterly meetings of a Minority and Women Business Outreach Committee to share information and discuss problems of access and marketing.

MWRA FY88 CURRENT EXPENSE BUDGET A & F DIVISION BY LINE ITEM



PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

ADMINISTRATION AND FINANCE DIVISION

EXPENSE LINE ITEM:	FY87 APPROVED BUDGET	FY88 BASE BUDGET	% CHANGE FROM FY87	FY88 INCREMENTAL BUDGET	% OF FY87 BUDGET	FY88 TOTAL BUDGET	% CHANGE FROM FY87
WAGES AND SALARIES	\$2,288,348	\$2,652,835	15.9%	\$305,413	13.3%	\$3,106,117	35.7%
OVERTIME	\$54,137	\$72,576	34.1%	\$0	0.0%	\$72,576	34.1%
FRINGE BENEFITS	\$169,362	\$383,273	126.3%	\$0	0.0%	\$383,273	126.3%
WORKERS' COMPENSATION	\$0	\$0		\$0		\$0	
TOTAL LABOR AND BENEFIT COST	\$2,511,847	\$3,108,684	23.8%	\$305,413	12.2%	\$3,561,966	41.8%
CHEMICALS	\$0	\$0		\$0		\$0	
ENERGY AND UTILITIES	\$274,670	\$250,000	-9.0%	\$0	0.0%	\$250,000	-9.0%
ONGOING MAINTENANCE	\$29,500	\$30,700	4.1%	\$109,000	369.5%	\$139,700	373.6%
NEW MAINTENANCE	\$0	\$0		\$42,550		\$42,550	
EDUCATION, TRAINING, & MEETINGS	\$90,750	\$104,775	15.5%	\$0	0.0%	\$104,775	15.5%
PROFESSIONAL SERVICES	\$999,500	\$818,100	-18.1%	\$510,000	51.0%	\$1,328,100	32.9%
OTHER MATERIAL	\$643,084	\$545,190	-15.2%	\$0	0.0%	\$545,190	-15.2%
OTHER SERVICES	\$1,995,850	\$2,653,925	33.0%	\$65,000	3.3%	\$2,718,925	36.2%
TOTAL DIVISION BUDGET	\$6,545,201	\$7,659,243	17.0%	\$1,031,963	15.8%	\$8,691,206	32.8%

PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988
ADMINISTRATION AND FINANCE DIVISION

EXPENSE LINE ITEM:	DIRECTOR'S OFFICE	PERSONNEL	ADMIN. SERVICES	BUDGET	TREASURY	PROCUREMENT	MIS	DIVISION TOTAL
IMAGES AND SALARIES	\$309,096	\$644,467	\$470,500	\$394,187	\$570,725	\$483,786	\$233,356	\$3,106,117
IOVERTIME	\$3,840	\$6,160	\$18,679	\$4,060	\$21,700	\$16,265	\$1,872	\$72,576
IIFRINGE BENEFITS	\$380,878	\$350	\$400	\$140	\$350	\$1,000	\$155	\$383,273
IWORKERS' COMPENSATION	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ITOTAL: LABOR AND BENEFIT COST	\$693,814	\$650,977	\$489,579	\$398,387	\$592,775	\$501,051	\$235,383	\$3,561,966
ICHEMICALS	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
IUTILITIES AND ENERGY	\$0	\$0	\$250,000	\$0	\$0	\$0	\$0	\$250,000
IONGOING MAINTENANCE	\$1,000	\$0	\$86,700	\$0	\$0	\$0	\$52,000	\$139,700
IINER MAINTENANCE	\$0	\$0	\$42,550	\$0	\$0	\$0	\$0	\$42,550
IIEUCATION, TRAINING, & MEETINGS	\$22,500	\$24,500	\$5,500	\$5,450	\$6,000	\$11,700	\$29,125	\$104,775
IIPROFESSIONAL SERVICES	\$10,000	\$521,100	\$65,000	\$280,000	\$350,000	\$27,000	\$75,000	\$1,328,100
IIOHER MATERIAL	\$3,570	\$8,500	\$406,600	\$3,980	\$4,600	\$19,720	\$98,220	\$545,190
IIOHER SERVICES	\$875	\$164,000	\$2,241,300	\$7,800	\$189,500	\$104,250	\$11,200	\$2,718,925
ITOTAL PROPOSED BUDGET	\$731,759	\$1,369,077	\$3,587,229	\$695,617	\$1,142,875	\$663,721	\$500,928	\$8,691,206

Proposed FY88 Current Expense Budget

ADMINISTRATION AND FINANCE DIVISION

Administration and Finance Division Budget Summary

The proposed budget of this Division is \$8,691,206 and has increased 32.8% from FY87. Most of the increases are for labor costs which make up slightly higher proportion of the Division's budget than they did in FY87. The base budget contains significant increases and decreases from the approved FY87 amount which are explained below. The changes to the base add 17% while incremental budget increases are 15.8% of the additional FY88 costs. The largest increase to the base budget is for the lease of the Authority's headquarters buildings in Charlestown. The most significant incremental increase is for professional services. \$100,000 in budgeted costs for Authority unemployment insurance are included in the fringe benefits line in this Division because this cost is centrally managed by the Personnel Department. In FY87, this cost was included in all Division budgets.

Wages and Salaries

The incremental budget in this category is for eleven positions to be filled during the fiscal year, two each in the Treasury and Budget Departments, three in the Procurement Department and four in MIS. The cost of these additional employees in FY88 is \$273,333.

Two payroll assistant positions are included in the Comptroller's section to cover an increasing centralization of payroll functions in the Authority. The additional positions in the Budget Department will perform functions related to capital planning and capital budget implementation monitoring. Two of the positions in the Procurement Department are for the Authority's inventory management program which is now being developed, and the third is an additional buyer to support the centralized purchasing function.

It is expected that the Authority's MIS needs assessment study will be concluded in FY87 and that implementation of the recommended plan for procurement and management of information systems will require additional personnel. The four staff positions will provide assistance to all areas of the Authority as more sophisticated information systems are developed and used.

Overtime

The base budget for overtime in this Division is increased by 34% due to a FY87 budgeting error in estimating the overtime required in the Treasury Department. The additional overtime in the Treasury Department is \$17,030 of the Division's \$18,439 increase.

Energy and Utilities

The amount in this line item is for electricity at the Charlestown headquarters which powers lights, equipment and the heating, ventilation and air conditioning system. On the basis of information now available, it appears that the FY87 budget overestimated the costs for the buildings at Charlestown, and the base budget has been reduced accordingly.

Ongoing Maintenance

The Division has budgeted a substantial increase in Ongoing Maintenance in the Administrative Services and MIS Departments. \$105,200 of the incremental amount is to cover service contracts on all Authority-owned computer and word-processing equipment. Other equipment located in Charlestown such as duplicating machines and the telephone system will also be covered. \$3,800 is included for increased costs of routine interior maintenance in the two Charlestown buildings.

New Maintenance

All of the \$42,550 included in New Maintenance is budgeted in the Administrative Services Department. It covers maintenance for the Authority's new vans (\$3,600) and maintenance of the Authority's headquarters buildings which was not likely to be required in FY87, but is not covered in the lease. Such maintenance tasks include repainting and carpet cleaning; window replacement; repairs to plumbing, electrical and HVAC systems; service calls and repair of kitchen equipment; rekeying and key duplication. The total budgeted for such maintenance is \$12,200. An additional \$26,750 is budgeted for care of the Authority's furniture in order to extend its useful life.

Education, Training and Meetings

The increase in the base budget is due to the fact that the average staffing level of the Authority in FY88 will be significantly higher than it was in FY87. The budget in this Division includes computer and word processing training for personnel in all Divisions of the Authority.

Professional Services

The base budget for professional services is \$181,400 or 18% less than the FY87 budget. While cost increases in certain areas such as employee training, claims administration and health resources are included in the base, projected costs for labor relations counsel and fiscal agent fees are lower. In addition, four contracts budgeted in FY87 are not included in fiscal 1988 either because they will have concluded (accounting and rate study consultants) or will be carried as a capital expense (feasibility consultant and job evaluation consultant).

The incremental increase for FY88 is \$510,000. The largest part of this increase (\$280,000) is located in the Budget Department where \$150,000 has been budgeted to provide technical assistance to cities and towns to develop water conservation rate methodologies and enterprise fund accounting and \$100,000 has been projected as the cost of a consultant to update and bring "in house" the sewer rate model. An additional \$30,000 has been budgeted for payment for the services of an economist under an inter-agency agreement with EPA. These funds were included in the Wages and Salaries line item in FY87.

The budget for the MIS Department includes \$75,000 for consultants to assist the Authority in implementing information systems. Such consultants would assist in projects such as the computerization of inventory and purchasing systems, developing software for specialized application and networking personal computer user groups. The budget of the Treasury Department contains \$20,000 for an actuarial study for the Authority's retirement fund.

Other incremental amounts budgeted in this cost category are \$65,000 in Administrative Services for security services for the Charlestown headquarters building and \$10,000 in the Division Director's budget for short-term consultant advice on such things as transportation management or systems design. \$60,000 is included in the Personnel Department to provide contract services for assistance to employees with alcohol or other drug abuse problems; emotional, marital or stress management problems; or serious financial or legal problems which affect their work and well-being.

Other Materials

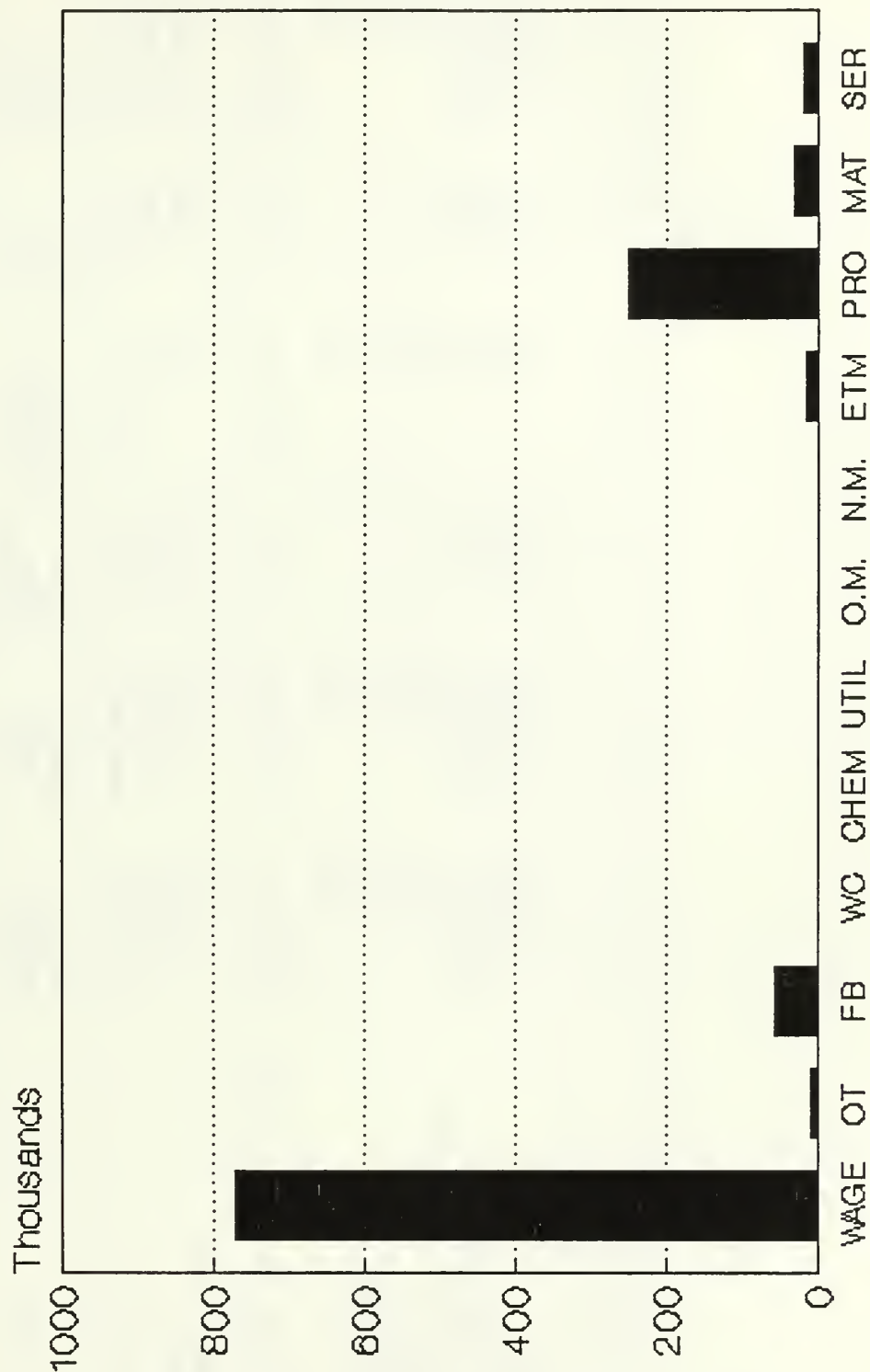
The base budget for Other Materials in this Division has been reduced from the FY87 budget by 16.3% largely due to the one time or infrequent purchases which were included in FY87. The major increase included in the base is \$110,000 for Office Supplies for all of Charlestown headquarters. This category includes all office materials used by personnel located in Charlestown, from copy machine paper to paper clips.

Other Services

The base budget in this cost category is one-third more than the FY87 budget. Nearly 85% of the base cost is located in the Administrative Services Department, which provides services either for the whole Authority or for those functions located at the Charlestown headquarters. All general costs for lease of Charlestown office space, space alterations, telephones, equipment and furniture rentals, printing and outside duplicating, parking space leases, microfilming, library subscriptions and courier service are contained in this budget. The single largest increase is \$457,700 for the least of office and parking space. This increase is large in FY88 because the Authority did not have to pay full year costs for space in Charlestown in FY87. Future year increases for Charlestown headquarters space will be considerably more moderate.

The incremental amount in this cost category is for contract payroll services which was not budgeted in FY87.

MWRA FY88 CURRENT EXPENSE BUDGET LAW DIVISION BY LINE ITEM



PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

LAW DIVISION

EXPENSE LINE ITEM:	FY87 APPROVED BUDGET	FY88 BASE BUDGET	% CHANGE FROM FY87	FY88 INCREMENTAL BUDGET	% OF FY87 BUDGET	FY88 TOTAL BUDGET	% CHANGE FROM FY87
WAGES AND SALARIES	\$554,434	\$668,881	20.6%	\$78,500	14.2%	\$768,581	38.6%
OVERTIME	\$3,030	\$7,500	147.5%	\$0	0.0%	\$7,500	147.5%
FRINGE BENEFITS	\$33,077	\$55,969	69.2%	\$0	0.0%	\$55,969	69.2%
WORKERS' COMPENSATION	\$0	\$0		\$0		\$0	
TOTAL LABOR AND BENEFIT COST	\$590,541	\$732,350	24.0%	\$78,500	13.3%	\$832,050	40.9%
CHEMICALS	\$0	\$0		\$0		\$0	
ENERGY AND UTILITIES	\$0	\$0		\$0		\$0	
ONGOING MAINTENANCE	\$0	\$0		\$0		\$0	
NEW MAINTENANCE	\$0	\$0		\$0		\$0	
EDUCATION, TRAINING, & MEETINGS	\$35,025	\$13,575	-61.2%	\$0	0.0%	\$13,575	-61.2%
PROFESSIONAL SERVICES	\$230,000	\$250,000	8.7%	\$0	0.0%	\$250,000	8.7%
OTHER MATERIAL	\$51,060	\$29,500	-42.2%	\$0	0.0%	\$29,500	-42.2%
OTHER SERVICES	\$8,850	\$16,850	90.4%	\$0	0.0%	\$16,850	90.4%
TOTAL DIVISION BUDGET	\$915,476	\$1,063,475	16.2%	\$78,500	8.6%	\$1,141,975	24.7%

Proposed FY88 Current Expense Budget

LAW DIVISION

Law Division Budget Summary

The Law Division proposed budget is \$1,141,975, 1.8% of the Authority's direct costs. The increase in expenditures from FY87 is \$226,499 or 22.7%. Labor costs account for 72.9% of the Division's budget and 119% of the budget increase; other costs are projected to decrease slightly in FY88.

Wages and Salaries

The Law Division has been adding staff during FY87 and the Division Director indicates that FY88 will be a year in which the Division stabilizes its resources. Two additional positions, staff counsel and senior staff counsel, will allow the Division to perform most of the legal work required by the Authority including enforcement and defense of newly promulgated regulations, permitting activities, land acquisition, claims work and environmental and other legal opinions and defense work. The cost of the additional positions in the Division is \$78,500 for FY88. The Division will use law school students to supplement its work force as part of the Authority's cooperative education efforts.

Overtime

The increase in overtime in this Division is due to an error in budgeting for FY87 for right-of-way agents who often do work outside normal working hours. Their overtime was not included in FY87.

Professional Services

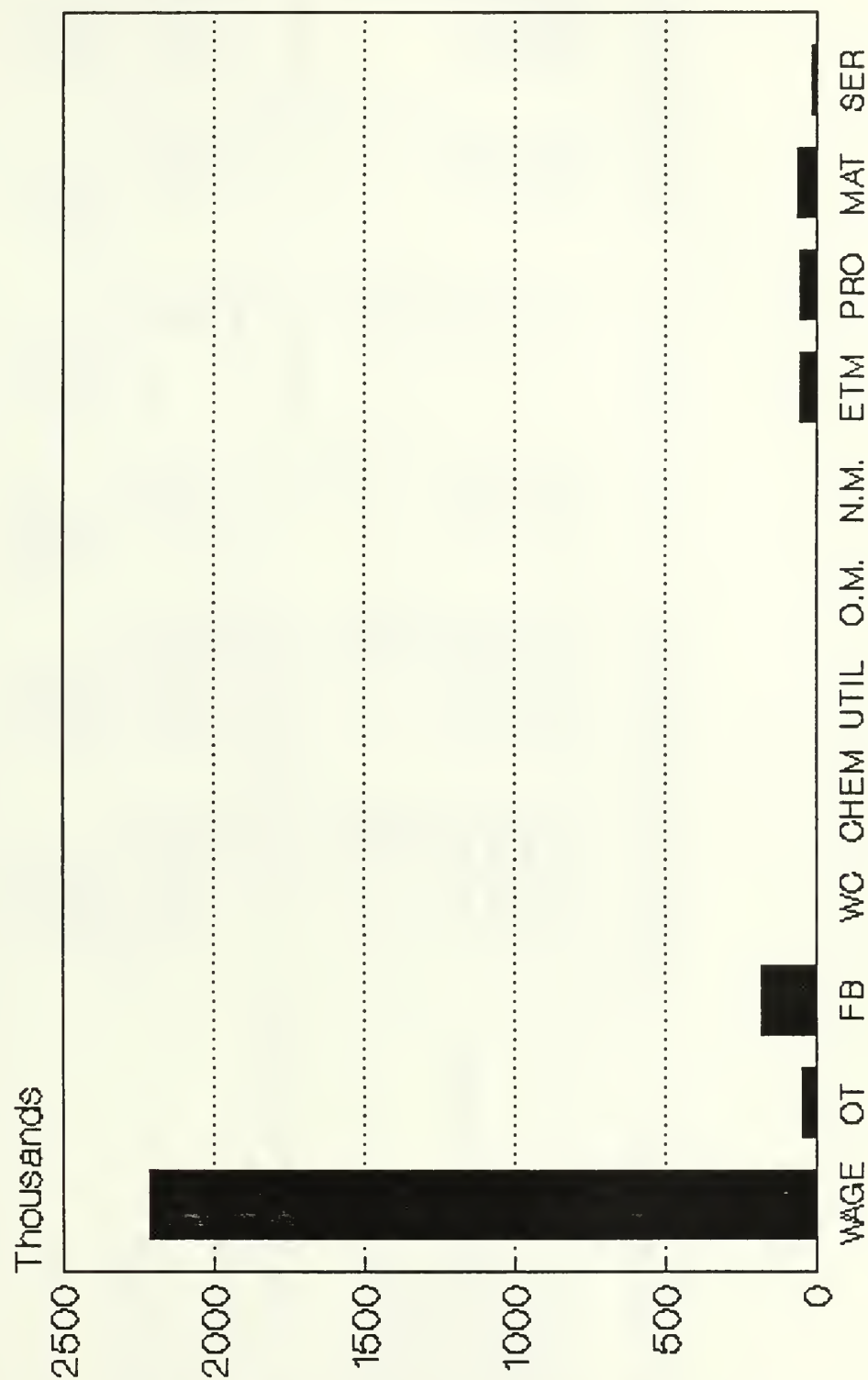
The change in the base budget for professional services is made up of a decrease of \$15,000 for outside legal services and an increase of \$35,000 in the budget for witnesses and real estate appraisal costs.

Other Materials and Other Services

There is a 22.6% decrease in the combined budgets for Other Materials and Other Services in this Division, although certain costs have been shifted from the "materials" to "services" category. The decrease is because one time or infrequent costs

budgeted in FY87 to establish the law library and to buy equipment for Division staff are not included in FY88. The cost transferred from materials to services is to provide access by Division staff to data and information bases through electronic subscription services.

MWRA FY88 CURRENT EXPENSE BUDGET ENGINEERING DIVISION BY LINE ITEM





PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

ENGINEERING DIVISION

EXPENSE LINE ITEM:	FY87 APPROVED BUDGET	FY88 BASE BUDGET	% CHANGE FROM FY87	FY88 INCREMENTAL BUDGET	% OF FY87 BUDGET	FY88 TOTAL BUDGET	% CHANGE FROM FY87
WAGES AND SALARIES	\$1,481,600	1,809,558	22.1%	\$397,441	26.8%	\$2,206,999	49.0%
OVERTIME	\$43,424	\$42,705	-1.7%	\$0	0.0%	\$42,705	-1.7%
FRINGE BENEFITS	\$109,624	\$180,289	64.5%	\$0	0.0%	\$180,289	64.5%
WORKERS' COMPENSATION	\$0	\$0		\$0		\$0	
TOTAL LABOR AND BENEFIT COST	\$1,634,648	\$2,032,552	24.3%	\$397,441	24.3%	\$2,429,993	48.7%
CHEMICALS	\$0	\$0		\$0		\$0	
ENERGY AND UTILITIES	\$0	\$0		\$0		\$0	
ONGOING MAINTENANCE	\$0	\$0		\$0		\$0	
NEW MAINTENANCE	\$0	\$0		\$0		\$0	
EDUCATION, TRAINING, & MEETINGS	\$40,810	\$53,300	30.6%	\$0	0.0%	\$53,300	30.6%
PROFESSIONAL SERVICES	\$50,000	\$50,000	0.0%	\$0	0.0%	\$50,000	0.0%
OTHER MATERIAL	\$62,200	\$59,640	-4.1%	\$0	0.0%	\$59,640	-4.1%
OTHER SERVICES	\$13,500	\$14,410	6.7%	\$0	0.0%	\$14,410	6.7%
TOTAL DIVISION BUDGET	\$1,801,158	\$2,209,902	22.7%	\$397,441	22.1%	\$2,607,343	44.8%

PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988
ENGINEERING DIVISION

EXPENSE LINE ITEM:	DIRECTOR'S OFFICE	WATER	WASTEWATER	TECHNICAL SUPPORT	ADMIN. SUPPORT	DIVISION TOTAL
WAGES AND SALARIES	\$258,486	\$402,127	\$815,070	\$401,481	\$329,835	\$2,206,999
OVERTIME	\$3,601	\$5,954	\$14,976	\$12,558	\$5,616	\$42,705
FRINGE BENEFITS	\$178,399	\$450	\$600	\$500	\$240	\$180,289
WORKERS' COMPENSATION	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL: LABOR AND BENEFIT COST	\$440,486	\$408,531	\$830,646	\$414,639	\$335,691	\$2,429,993
CHEMICALS	\$0	\$0	\$0	\$0	\$0	\$0
UTILITIES AND ENERGY	\$0	\$0	\$0	\$0	\$0	\$0
ONGOING MAINTENANCE	\$0	\$0	\$0	\$0	\$0	\$0
NEW MAINTENANCE	\$0	\$0	\$0	\$0	\$0	\$0
EDUCATION, TRAINING, & MEETINGS	\$33,825	\$4,200	\$6,700	\$4,100	\$4,475	\$53,300
PROFESSIONAL SERVICES	\$50,000	\$0	\$0	\$0	\$0	\$50,000
OTHER MATERIAL	\$7,820	\$6,270	\$10,044	\$32,406	\$3,100	\$59,640
OTHER SERVICES	\$900	\$2,460	\$4,550	\$5,300	\$1,200	\$14,410
TOTAL PROPOSED BUDGET	\$533,031	\$421,461	\$851,940	\$456,445	\$344,466	\$2,607,343

Proposed FY88 Current Expense Budget

ENGINEERING DIVISION

Engineering Division Budget Summary

The proposed budget of this Division includes a substantial increase from FY87. 22.7% of the increase is in the base budget; 22.1% of additional expenses are incremental. In both cases the increases are in labor costs; expenses in other cost categories are lower than they were in FY87. The Engineering Division accounts for 4% of the Authority's direct costs. It is responsible for much of the work in carrying out the capital improvement program. The Division's major project workload (including management of grants) is described in the Authority's proposed Capital Budget for FY87-FY89.

Wages and Salaries

The workload of this Division will be increased in FY88 as the Authority's capital improvement program accelerates. An additional 17 staff will be hired over the course of the year to manage the increased workload. Staffing is expected to increase more moderately in FY89 as new personnel added in fiscal years 1987 and 1988 become increasingly knowledgeable about MWRA work and, therefore, more productive.

17 positions will be added to the Division in FY88. 9 are in Wastewater Engineering, 3 in Water Engineering, 3 in Administrative Support and 1 each in the Director's office and in Technical Support. The Wastewater Engineering Department's Program Manager position and one Project Manager will have responsibility for the Authority's CSO program. Other Project Managers will be assigned to Interception and Pumping projects. Two Project Engineers will work on Interception and Pumping projects; one will be assigned to Treatment projects. Staff Engineers in the Wastewater Department and an additional three staff in the Water Engineering Department will work on various projects proposed in the capital budget.

The Project Manager in the Technical Support Department will manage all the technical support contracts included in the proposed Capital Budget. Additional personnel in Administrative Support Department are requested to manage the Authority's grant program.

The Division budgeted no funds in FY87 for temporary personnel, but requires skilled word processing assistance throughout the year when large reports or documents must be produced. \$14,640 has been budgeted for 1,976 hours on a flexible, as needed

basis. The Division also proposes to participate in a cooperative education program in FY88 and has budgeted \$20,800 for that purpose.

Education, Training and Meetings

The additional amount in this line item covers costs for tuition reimbursement.

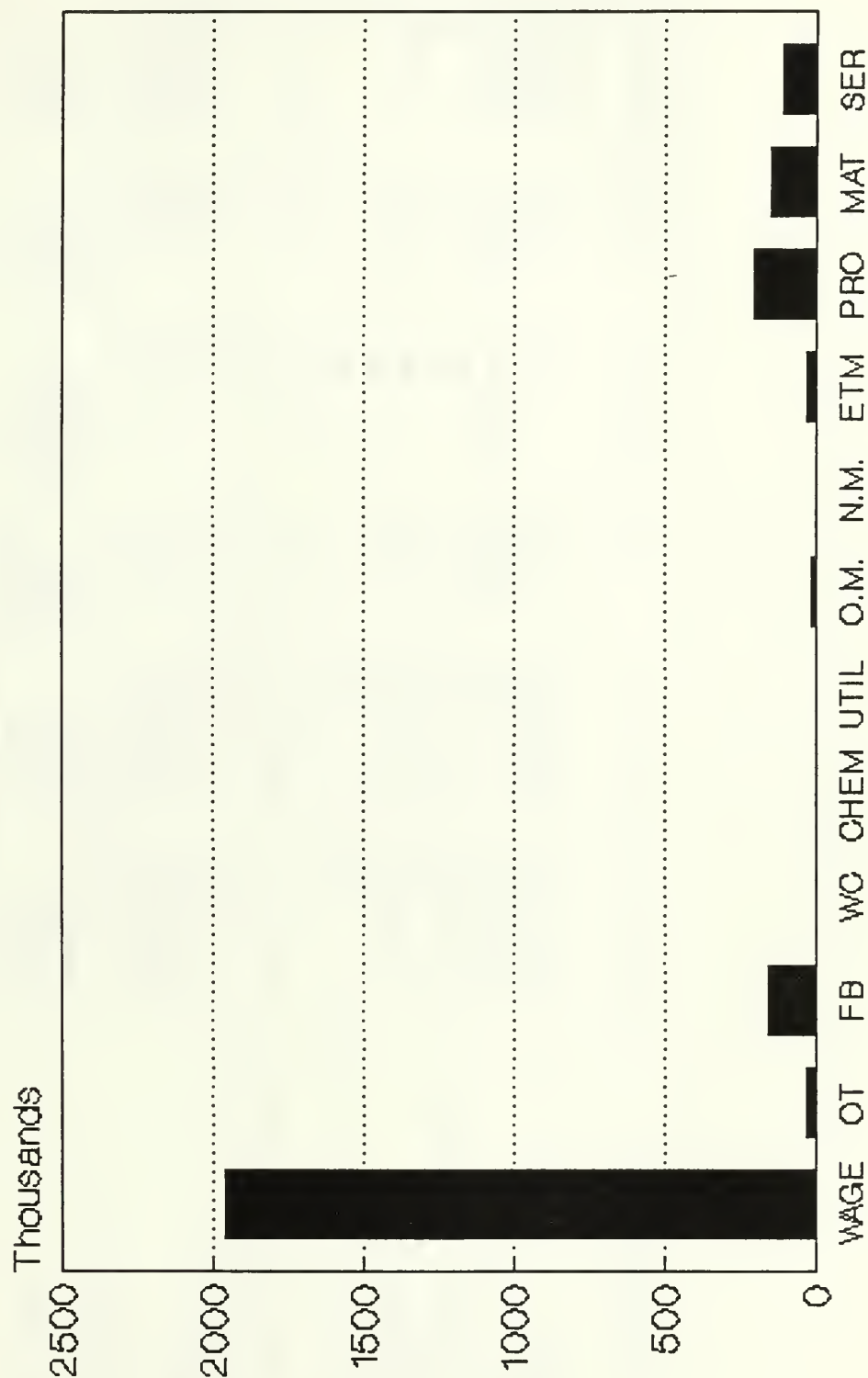
Other Materials

Additional plan racks, calculators, typewriters and engineering equipment will be purchased in FY88 to support staff hired in the last months of FY87 and additional FY88 personnel.

Other Services

Added costs in the base budget for Other Services cover freight and courier costs not budgeted in FY87 and licensing and professional memberships for additional staff.

MWRA FY88 CURRENT EXPENSE BUDGET CONSTRUCTION DIVISION BY LINE ITEM



THE UNIVERSITY OF CHICAGO

PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

CONSTRUCTION DIVISION

EXPENSE LINE ITEM:	FY87 APPROVED BUDGET	FY88 BASE BUDGET	% CHANGE FROM FY87	FY88 INCREMENTAL BUDGET	% OF FY87 BUDGET	FY88 TOTAL BUDGET	% CHANGE FROM FY87
WAGES AND SALARIES	\$1,629,482	1,880,382	15.4%	\$78,750	4.8%	\$1,959,132	20.2%
OVERTIME	\$175,425	\$30,284	-82.7%	\$0	0.0%	\$30,284	-82.7%
FRINGE BENEFITS	\$148,122	\$154,335	4.2%	\$0	0.0%	\$154,335	4.2%
WORKERS' COMPENSATION	\$0	\$0		\$0		\$0	
TOTAL LABOR AND BENEFIT COST	\$1,953,029	\$2,065,001	5.7%	\$78,750	4.0%	\$2,143,751	9.8%
CHEMICALS	\$0	\$0		\$0		\$0	
ENERGY AND UTILITIES	\$0	\$0		\$0		\$0	
ONGOING MAINTENANCE	\$10,000	\$10,000	0.0%	\$0	0.0%	\$10,000	0.0%
NEW MAINTENANCE	\$0	\$0		\$0		\$0	
EDUCATION, TRAINING, & MEETINGS	\$35,000	\$31,150	-11.0%	\$0	0.0%	\$31,150	-11.0%
PROFESSIONAL SERVICES	\$20,000	\$0	-100.0%	\$200,000	1000.0%	\$200,000	900.0%
OTHER MATERIAL	\$207,175	\$146,625	-29.2%	\$0	0.0%	\$146,625	-29.2%
OTHER SERVICES	\$100,750	\$107,000	6.2%	\$0	0.0%	\$107,000	6.2%
TOTAL DIVISION BUDGET	\$2,325,954	\$2,359,776	1.5%	\$278,750	12.0%	\$2,638,526	13.4%



PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988
CONSTRUCTION DIVISION

EXPENSE LINE ITEM:	DIRECTOR'S OFFICE	WASTEWATER	WATER	DIVISION TOTAL
WAGES AND SALARIES	\$453,308	\$851,805	\$654,019	\$1,959,132
OVERTIME	\$800	\$21,993	\$7,491	\$30,284
FRINGE BENEFITS	\$146,085	\$6,000	\$2,250	\$154,335
WORKERS' COMPENSATION	\$0	\$0	\$0	\$0
TOTAL: LABOR AND BENEFIT COST	\$600,193	\$879,798	\$663,760	\$2,143,751
CHEMICALS	\$0	\$0	\$0	\$0
UTILITIES AND ENERGY	\$0	\$0	\$0	\$0
ONGOING MAINTENANCE	\$0	\$5,000	\$5,000	\$10,000
NEW MAINTENANCE	\$0	\$0	\$0	\$0
EDUCATION, TRAINING, & MEETINGS	\$3,950	\$13,600	\$13,600	\$31,150
PROFESSIONAL SERVICES	\$200,000	\$0	\$0	\$200,000
OTHER MATERIAL	\$21,850	\$59,425	\$65,350	\$146,625
OTHER SERVICES	\$12,000	\$47,500	\$47,500	\$107,000
TOTAL PROPOSED BUDGET	\$837,993	\$1,005,323	\$795,210	\$2,638,526

Proposed FY88 Current Expense Budget

CONSTRUCTION DIVISION

Construction Division Budget Summary

The proposed budget of the Construction Division is \$312,572 (13.4%) higher than that of FY87. It accounts for 4% of the Authority's direct costs. Most of the increase is incremental and is the result of a higher budget for costs of personnel and an incremental increase in professional services. Most of the base budget in other categories is either level funded or reduced.

Wages and Salaries

The incremental budget for wages and salaries includes two additional positions in this Division. The Construction Assistant will aid the Division Director in carrying out Divisional responsibilities. An additional Construction Coordinator position in the Wastewater Department is needed to manage increased construction activities in FY88.

Professional Services

The proposed incremental budget is \$100,000 for auditing services and \$100,000 for other professional services. A number of MDC contracts are due for EPA audit which will include an audit of field records and construction documents. These records are in the possession of the Authority, but are not well organized. Services of an accounting firm are needed to prepare the Authority for these audits in order to assure that all grant revenue is received. The consultants will also advise the Division on record-keeping required for future EPA and other audits.

\$100,000 in other professional services will provide the Division with advice on an as-needed basis to review technical issues which are either explicit or implicit in existing construction contract documents and specifications.

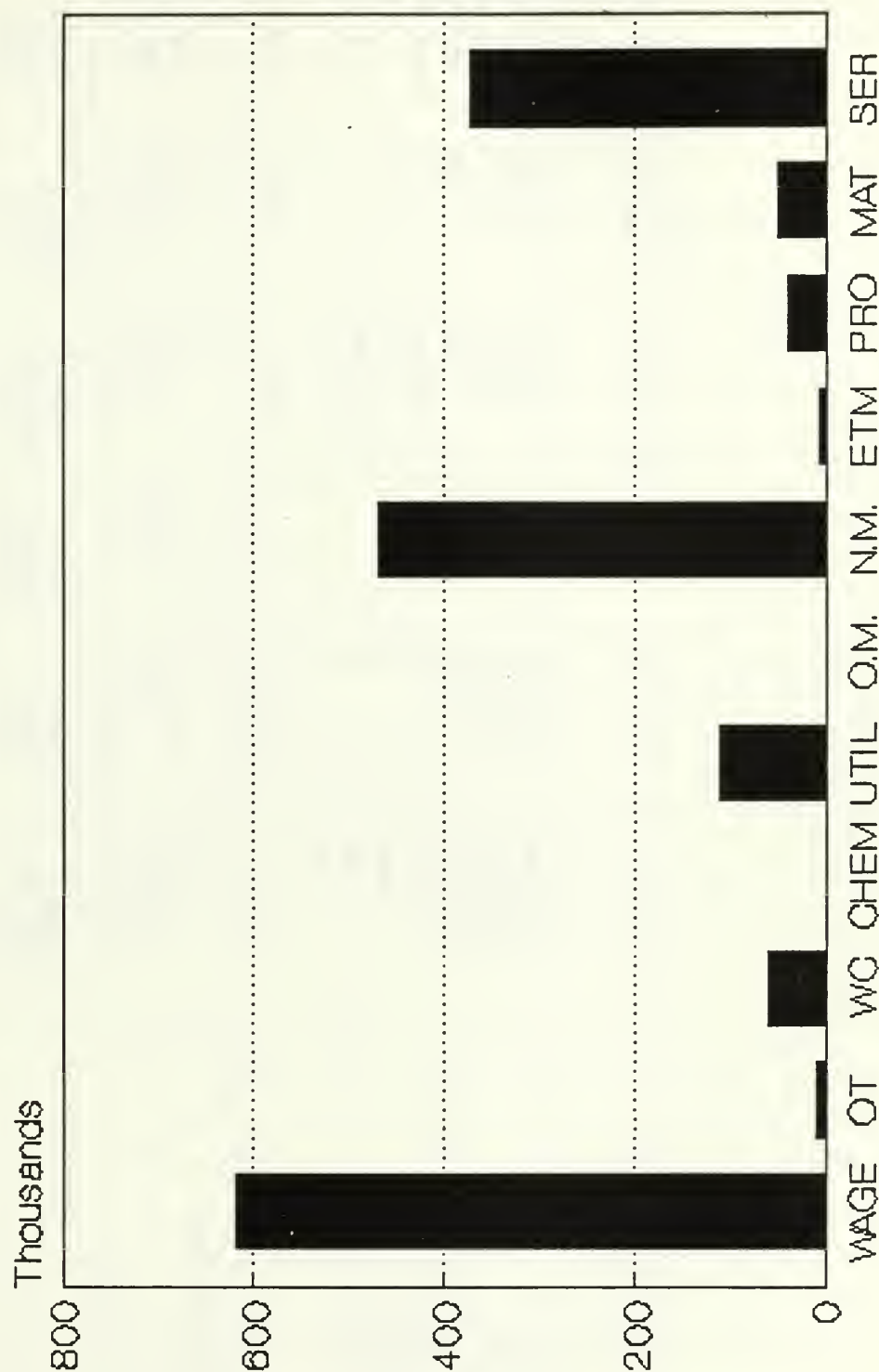
Other Materials

The base budget in this expenditure category has been adjusted to account for one-time purchases of equipment and furniture in FY87.

Other Services

The Division has proposed a base budget increase of \$6,250 to cover a greater need for reproducing construction drawings and documents (\$5,000) and additional costs for licenses, memberships and subscriptions.

MWRA FY88 CURRENT EXPENSE BUDGET SUPPORT SERVICES BY LINE ITEM



PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

SUPPORT DIVISION

EXPENSE LINE ITEM:	FY87 APPROVED BUDGET	FY88 BASE BUDGET	% CHANGE FROM FY87	FY88 INCREMENTAL BUDGET	% OF FY87 BUDGET	FY88 TOTAL BUDGET	% CHANGE FROM FY87
WAGES AND SALARIES	\$219,666	\$298,499	35.9%	\$319,017	145.2%	\$617,516	181.1%
OVERTIME	\$1,650	360	-78.2%	\$9,280	562.4%	\$9,640	484.2%
FRINGE BENEFITS	\$11,652	58,945	405.9%	\$0	0.0%	\$58,945	405.9%
WORKERS' COMPENSATION	\$0	0		\$0		\$0	
TOTAL LABOR AND BENEFIT COST	\$232,968	\$357,804	53.6%	\$328,297	140.9%	\$686,101	194.5%
CHEMICALS	\$0	0		\$0		\$0	
ENERGY AND UTILITIES	\$0	0		\$110,000		\$110,000	
ONGOING MAINTENANCE	\$600	0	-100.0%	\$0	0%	\$0	-100.0%
NEW MAINTENANCE	\$0	0		\$470,000		\$470,000	
EDUCATION, TRAINING, & MEETINGS	\$10,300	7,650	-25.7%	\$0	0%	\$7,650	-25.7%
PROFESSIONAL SERVICES	\$15,000	15,000	0.0%	\$25,000	166.7%	\$40,000	166.7%
OTHER MATERIAL	\$33,000	40,270	22.0%	\$9,500	28.8%	\$49,770	50.8%
OTHER SERVICES	\$45,500	46,650	2.5%	\$325,000	714.3%	\$371,650	716.8%
TOTAL DIVISION BUDGET	\$337,368	467,374	38.5%	\$1,267,797	375.8%	\$1,735,171	414.3%

PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988
SUPPORT DIVISION

EXPENSE LINE ITEM:	DIRECTOR'S OFFICE	RISK MGNT.	VEHICLE MAINT.	DIVISION TOTAL
WAGES AND SALARIES	\$199,499	\$164,417	\$253,600	\$617,516
OVERTIME	\$180	\$180	\$9,280	\$9,640
FRINGE BENEFITS	\$58,035	\$0	\$910	\$58,945
WORKERS' COMPENSATION	\$0	\$0	\$0	\$0
TOTAL: LABOR AND BENEFIT COST	\$257,714	\$164,597	\$263,790	\$686,101
CHEMICALS	\$0	\$0	\$0	\$0
UTILITIES AND ENERGY	\$0	\$0	\$110,000	\$110,000
ONGOING MAINTENANCE	\$0	\$0	\$0	\$0
NEW MAINTENANCE	\$0	\$0	\$470,000	\$470,000
EDUCATION, TRAINING, & MEETINGS	\$6,100	\$0	\$1,550	\$7,650
PROFESSIONAL SERVICES	\$0	\$15,000	\$25,000	\$40,000
OTHER MATERIAL	\$3,100	\$37,170	\$9,500	\$49,770
OTHER SERVICES	\$750	\$900	\$370,000	\$371,650
TOTAL PROPOSED BUDGET	\$267,664	\$217,667	\$1,249,840	\$1,735,171

Proposed FY88 Current Expense Budget

SUPPORT DIVISION

Support Division Budget Summary

The increase in the Support Division budget is the largest of any Division in the Authority, due to the addition of a Vehicle Maintenance Department which is discussed below. The Division was allocated less than 1% of the Authority's direct costs for FY87. In FY88, that proportion will increase to 2.7%, and it is likely to increase further in future years as additional functions are centralized and the responsibility for them is located under the Support Division. 39.5% of the Division's budget is for staff; most of the remaining amount is for costs of vehicle maintenance and the building in which that function is housed.

Vehicle Maintenance Department

The budget for this Division contains a major incremental portion to cover expenses of the vehicle management and maintenance function being developed in FY87. The Authority inherited a fleet of vehicles from the MDC, most of which had extremely high mileage and were old and poorly maintained. As a start-up cost, the Authority has been replacing these vehicles and purchasing its additional vehicle needs under the capital budget over a three-year period. This investment in vehicles (including some heavy equipment) must now be managed and maintained to assure its full useful life, and an orderly replacement of vehicles must be scheduled.

Most of the incremental costs of this Division in FY88 are for the vehicle maintenance garage now being established in Charlestown. The purpose of this garage is to centralize all vehicle operating and maintenance functions which can be performed more effectively and efficiently from a central location. The garage can provide gas for all vehicles based within a certain mile radius, but will not provide this kind of service or some routine maintenance services for vehicles where travel time and distance make it inefficient. The Department Director and other staff will be hired in FY87, and one of their first tasks will be to determine the extent to which it is more efficient to perform some Department functions in field locations. Fleet management responsibility will be fully centralized, however.



Wages and Salaries

The incremental wage and salary portion of this Division budget covers one additional position in the Division Director's office which will be needed as this Division grows and a safety hygienist in the Risk Management Department to work with the Safety Officer in developing programs for the Authority to assure a safe and healthy workplace environment.

All other incremental wage and salary costs are to staff the Vehicle Maintenance Department. This Department will require a staff of 24, most of whom will operate the centralized vehicle maintenance facility. 12 positions are budgeted and will be hired before the beginning of the fiscal year; the remaining 12 will potentially be filled with transfers of personnel from Divisions who now have automotive maintenance duties. The listing of required positions is as follows:

<u>Position</u>	<u>Required Positions</u>
Vehicle Maintenance Director	1
Master Mechanic	1
Foreman	2
Motor Equipment Repairman	8
Welder	1
Tire Repairman	2
Lubricator	2
Laborer	4
Truck Driver	2
Secretary	1

The 12 budgeted positions add \$253,500 to the costs of wages and salaries and \$9,280 to overtime.

Utilities and Energy

The building which will house the vehicle maintenance garage and warehouse functions will require an estimated \$110,000 for heat and other utilities.

New Maintenance

\$470,000 has been budgeted in this Division for maintenance. \$50,000 is included for maintenance and repair to garage equipment. Much of this equipment will be newly purchased under the capital budget; some of it will be transferred from other locations now performing vehicle maintenance. \$20,000 will be used to maintain the grounds and building itself. The remaining \$400,000 is the incremental cost of performing full scheduled and preventive maintenance on all Authority vehicles. This is considerably less than the estimated full annual cost of



operating and maintaining the Authority's vehicles, but some funds have been budgeted in other Divisions for automotive maintenance (\$160,677) and additional funds for gas and oil changes are included in the Other Materials line item. When staff has been hired to manage the vehicle maintenance function, there will be an evaluation of what components of vehicle maintenance will remain de-centralized, and funds will be reallocated as appropriate. It is clear, for instance, that some funds should remain in the Waterworks Division for gas and oil changes for vehicles located in Quabbin.

Professional Services

\$25,000 has been budgeted for security services at the Charlestown building housing the vehicle maintenance garage and Authority warehousing facilities.

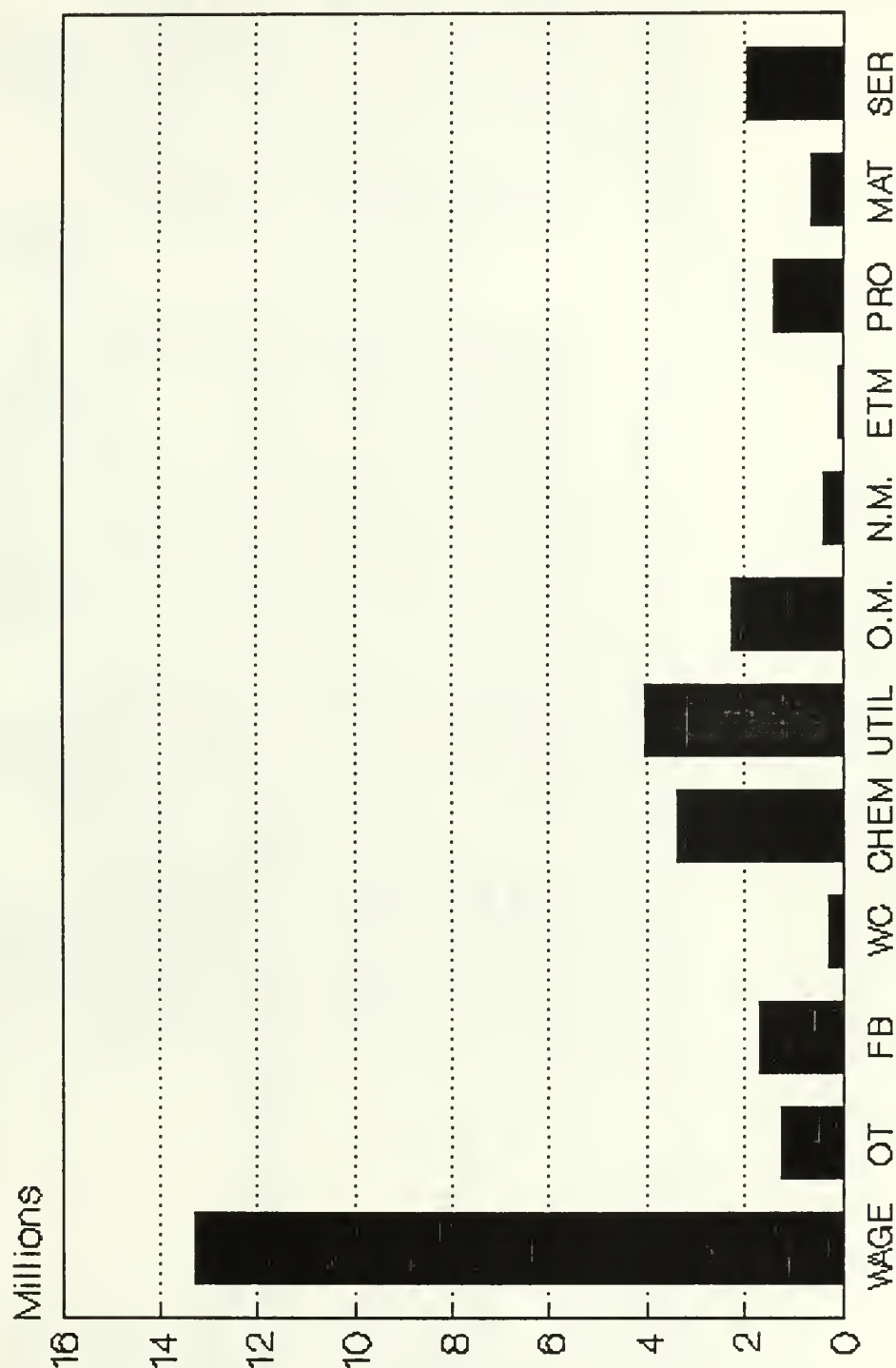
Other Materials

The incremental portion of this budget category covers the cost of work clothes for additional personnel and office supplies for the new garage facility.

Other Services

The FY87 budget included \$45,000 as the partial year cost of leasing space for a vehicle maintenance garage. The full year cost of the Charlestown facility which will contain a vehicle maintenance facility and warehouse space and may be used for some offices is estimated to be \$345,000, including telephone and lease costs. The incremental portion for space is \$300,000 over the base budget. An addition \$25,000 is budgeted for data processing costs of a computerized fuel dispensing system to be developed for the garage facility.

MWRA FY88 CURRENT EXPENSE BUDGET SEWERAGE DIVISION BY LINE ITEM



PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

SEWERAGE DIVISION

EXPENSE LINE ITEM:	FY87 APPROVED BUDGET	FY88 BASE BUDGET	% CHANGE FROM FY87	FY88 INCREMENTAL BUDGET	% OF FY87 BUDGET	FY88 TOTAL BUDGET	% CHANGE FROM FY87
WAGES AND SALARIES	\$11,336,596	13,004,164	14.7%	\$265,397	2.3%	\$13,269,561	17.1%
OVERTIME	\$1,229,929	1,276,245	3.8%	\$0	0.0%	\$1,276,245	3.8%
FRINGE BENEFITS	\$1,147,940	1,727,720	50.5%	\$0	0.0%	\$1,727,720	50.5%
WORKERS' COMPENSATION	201,360	293,000	45.5%	\$0	0.0%	293,000	45.5%
TOTAL LABOR AND BENEFIT COST	\$13,915,825	\$16,301,129	17.1%	\$265,397	1.9%	\$16,566,526	19.0%
CHEMICALS	\$3,244,787	3,385,093	4.3%	\$6,489	0.2%	\$3,391,582	4.5%
ENERGY AND UTILITIES	\$4,021,649	4,021,781	.0%	\$2,680	0.1%	\$4,024,461	0.1%
ONGOING MAINTENANCE	\$1,951,892	2,251,513	15.4%	\$0	0.0%	\$2,251,513	15.4%
NEW MAINTENANCE	\$1,117,639	0	-100.0%	\$380,714	34.1%	\$380,714	-65.9%
EDUCATION, TRAINING, & MEETINGS	\$56,535	55,455	-1.9%	\$43,670	77.2%	\$99,125	75.3%
PROFESSIONAL SERVICES	\$886,500	1,347,663	52.0%	\$67,485	7.6%	\$1,415,148	59.6%
OTHER MATERIAL	\$617,091	552,694	-10.4%	\$98,700	16.0%	\$651,394	5.6%
OTHER SERVICES	\$1,950,711	1,964,780	0.7%	\$15,000	0.8%	\$1,979,780	1.5%
TOTAL DIVISION BUDGET	\$27,762,629	\$29,880,108	7.6%	\$880,135	3.2%	\$30,760,243	10.8%

PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

SEWERAGE DIVISION

EXPENSE LINE ITEM:	DIRECTOR'S OFFICE	WATER QUALITY	MAINT. ENG.	PUMPING	COLLECT. SYSTEM	NUT ISLAND	DEER ISLAND	DIVISION TOTAL
WAGES AND SALARIES	\$1,418,880	\$1,313,017	\$367,063	\$2,648,739	\$1,031,222	\$1,716,980	\$4,773,660	\$13,269,561
OVERTIME	\$10,175	\$9,360	\$7,779	\$55,625	\$47,491	\$146,965	\$898,850	\$1,276,245
FRINGE BENEFITS	\$1,662,055	\$480	\$260	\$8,750	\$1,915	\$3,600	\$50,660	\$1,727,720
WORKERS' COMPENSATION	\$293,000	\$0	\$0	\$0	\$0	\$0	\$0	\$293,000
TOTAL: LABOR AND BENEFIT COST	\$3,384,110	\$1,322,857	\$375,102	\$2,813,114	\$1,080,628	\$1,867,545	\$5,723,170	\$16,566,526
CHEMICALS	\$0	\$0	\$0	\$33,802	\$18,229	\$843,937	\$2,495,614	\$3,391,582
UTILITIES AND ENERGY	\$0	\$0	\$0	\$606,916	\$25,430	\$459,690	\$2,932,425	\$4,024,461
ONGOING MAINTENANCE	\$3,200	\$10,433	\$76,400	\$204,200	\$139,288	\$552,821	\$1,265,171	\$2,251,513
NEW MAINTENANCE	\$1,600	\$5,658	\$0	\$170,000	\$70,000	\$3,000	\$130,456	\$380,714
EDUCATION, TRAINING, & MEETINGS	\$28,050	\$15,720	\$3,000	\$2,650	\$18,600	\$2,215	\$28,890	\$99,125
PROFESSIONAL SERVICES	\$0	\$1,137,063	\$200,000	\$0	\$0	\$67,485	\$10,600	\$1,415,148
OTHER MATERIAL	\$8,800	\$168,346	\$3,840	\$111,640	\$96,440	\$69,446	\$192,882	\$651,394
OTHER SERVICES	\$301,150	\$18,950	\$18,240	\$39,600	\$9,400	\$343,840	\$1,248,600	\$1,979,780
TOTAL PROPOSED BUDGET	\$3,726,910	\$2,679,027	\$676,582	\$3,981,922	\$1,458,015	\$4,209,979	\$14,027,808	\$30,768,243

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Proposed FY88 Current Expense Budget

SEWERAGE DIVISION

Sewerage Division Budget Summary

The proposed budget of this Division is \$2,997,614 higher than the approved budget in FY87. The base increase of 7.6% is the result of increased costs for personnel. Other cost categories in the base are \$267,825 less than in FY87, primarily because all costs in the "new" maintenance category are treated as incremental. The incremental increases, on the other hand, are primarily for maintenance projects which are described below.

Wages and Salaries

The incremental budget for wages and salaries includes funding of 16 additional positions to be filled during FY88. The positions are in those areas of the Division which do not yet have approved organizations. They will all be included in proposed reorganizations submitted to the Board of Directors. These are positions which were originally planned for FY87, but were deferred in order to formulate a more reasonable hiring plan for the Division in FY87. Four of the positions are in Collections, one is for Nut Island and eleven are for Deer Island. Partial salaries have been budgeted, according to the planned month of hire.

Overtime

The Sewerage Division overtime budget is \$46,316 or 3.8% higher than that approved for FY87. Overtime use in initial months of FY87 has exceeded budget, in part because additional personnel have not been hired as rapidly as originally planned. Nevertheless, the Division feels that most areas can be level funded in FY88. Additional overtime costs of \$30,006 are projected for Deer Island in order to continue a higher level of maintenance and to deal with emergencies.

An addition of \$7,171 in Collections is included. All overtime in this department is for maintenance emergencies. Overtime is used when there are breaks in the system, when snow storms occur and when there are flash rains which require clean up work by maintenance crews. With additional construction occurring in the system, there is a likelihood of a greater number of emergencies requiring overtime work. Additional personnel will also be available to work in emergency situations, adding to total overtime hours used.

No overtime was included in the FY87 budget for the personnel in Maintenance Engineering, who are required to work overtime whenever operating or maintenance emergencies require their attention outside normal working hours. \$7,779 has been added to the overtime budget for this staff. An additional \$1,360 is proposed in overtime for personnel in the Water Quality area. In this area, overtime is inversely related to number of staff, because some of their work with industries must be done early in the morning or after normal work hours.

Chemicals

The base budget for chemicals has been adjusted according to price projections outlined in the introductory part of this budget. The incremental amount is for sodium Hypochlorite in Collections which is for use at the Constitution Beach CSO facility.

Utilities and Energy

The budget in this line item increases only 0.1%. Pricing is in accordance with projections described earlier in this document. The base has been reduced by \$22,500 to account for a projected reduction in fuel oil use at Nut Island, where methane generated power will be used instead. The incremental portion is for electrical costs at the Constitution Beach CSO facility.

Ongoing Maintenance

The FY87 budget for maintenance included, for the first time, the distinction between "Ongoing" and "New" maintenance. This distinction is designed to separate a base level of maintenance required to keep facilities and equipment operating effectively from maintenance which is incremental. Incremental maintenance may include new initiatives, maintenance of an asset which was not in service the previous year, or maintenance which need not be performed on an annual basis. The distinction is useful for those reviewing Authority budgets and useful for managers planning maintenance activities and budgets.

In FY87, the Sewerage Division planned catch-up maintenance activities and a higher level of normal maintenance than it had performed in the past. It also planned to begin inventory of parts critical to repair work. Most of the additional cost for this higher level of maintenance was included in the category of "new" maintenance. Some of that activity level will continue in future years, particularly as additional maintenance employees are available to continue a higher level and quality of maintenance. The base budget for FY88 has been adjusted to reflect portions of the activity budgeted as new maintenance in

FY87 which will now continue as ongoing annual maintenance. The base increase is 15.4%, although the total maintenance budget for the Division is \$437,304 (14.2%) lower than the amount approved for FY87 and just \$72,461 (2.8%) higher than the FY86 budget for maintenance.

The largest increase in the base is \$222,917 in the budget for Deer Island, where a higher level of maintenance activity is expected to continue. A second major increase in the base budget is \$75,000 in Maintenance Engineering, where a contract for boiler maintenance initiated in FY87 is expected to continue as a part of regular annual maintenance. The base is reduced to eliminate funds budgeted in FY87 for work at the Winchester Maintenance Yard.

New Maintenance

\$33,258 of the \$380,714 in the new maintenance category is for materials and services to maintain additional vehicles in the Division. \$74,132 of the incremental amount is for cleaning and groundskeeping materials and services. \$11,632 in materials will be used to replace a section of the fence surrounding the plant at Deer Island. Fencing surrounding the North Maintenance Facility in Collections will also be replaced at an estimated cost of \$11,000. The driveway and parking lot at the South Maintenance Facility will be repaved. The cost is estimated to be \$15,000. Two fences will be installed at the Alewife Brook facility, a chain link fence around a transformer and a wooden fence around the property line. \$10,000 is the estimated cost. These groundskeeping projects total \$47,632 and will not become part of the FY89 base.

Two new projects in the Pumping Department will become ongoing in FY89. One is an additional \$15,000 for plantings at all 13 facilities. Some of the plantings will be perennials; others will need to be repeated each year. The Division proposes this program in order to make its facilities better "neighbors" for the residents living near them. The second is the renting of additional dumpsters at a cost of \$10,000 required because of the lack of dump sites for rubbish and garbage.

The other incremental maintenance projects, totalling \$274,824 are planned at the two treatment plants and in Collections and Pumping. In Collections, \$1,000 in plant and machinery materials for the Constitution Beach CSO facility and \$2,000 for a tidegate maintenance program are new this year, but will become part of the base in FY89. Other projects totalling \$17,000 will not. They are installation of gas heating at the North District garage facility (\$2,000) and sliplining a 200 foot section of the Boston Marginal Conduit in the Back Bay to eliminate infiltration (\$15,000).

The Pumping Department additional projects total \$133,000, approximately \$42,500 of which will be added to the FY89 base budget and \$90,500 of which is for one time or infrequent maintenance. \$2,000 will become part of ongoing maintenance to pay for rentals of emergency compressors and flood lighting both of which are typically needed when any power problems occur in pump station or CSO facilities. \$15,000 is budgeted for intrusion alarms at all facilities. This amount includes a monthly charge and some one-time funding for purchase of systems. \$25,000 is budgeted for parts for 12 diesel engines at the Quincy and Braintree/Weymouth pumping facilities and the Prison Point and Cottage Farm CSO facilities. Approximately half of this amount will become part of the FY89 base budget to support ongoing maintenance efforts; the remaining half is for catch-up inventory purchases and will not recur in FY89.

With the reorganization of the Division, there will be a support group in the Pumping Department providing machine shop, painting and electrical support services to all Pumping functions and facilities. \$27,000 has been budgeted for this group to purchase materials and equipment. Approximately, half of this amount will become part of the base budget in FY89. The rest is for purchase of such equipment as chain falls, pullies, hydraulic jacks and slings, test kits, tool boxes, a steam cleaning machine and assorted shop tools.

Budgeted costs in Pumping which will not be included in the FY89 base are \$19,000 for repointing chimneys at the Quincy and Braintree/Weymouth pumping stations, \$18,000 for replacing the roof and eight windows and window sashes at the Squantum Pumping Station, \$2,000 for an electric hot water heater at the East Boston Steam Station and \$5,000 to replace an electric motor at the Prison Point facility. \$7,000 is budgeted for purchase of tools to remain at the pumping and CSO facilities and \$5,000 is budgeted for purchase of specialized equipment for CSO facilities. Such equipment includes flow meters, gauges to measure oil pressure and water temperature, and a master control panel for voltage/amperage and RPM readouts. \$1,000 is included to replace anti-corrosive covering for discharge lines at Cottage Farm and Prison Point. The covering must be replaced approximately every five years due to the high corrosivity of sodium hypochloride used in these facilities. \$7,000 is budgeted for repairs to the Cottage Farm facility, including replacement of doors and door frames and repair to the lighting system in the sedimentation tank area.

\$3,000 has been budgeted for Nut Island to set up a testing program for fuel and oil to prevent damage to engines as a result of poor quality supplies. The annual cost of such a testing program will be included in the FY89 base budgets.

\$15,200 in the incremental, new maintenance budget for Deer Island will become part of the FY89 base maintenance budget. This amount includes \$12,000 for a new microcellerate product

used to thin out grease buildups in digesters and \$3,200 for removal and disposal of waste lube oil which is no longer burned at the plant. Non-recurring maintenance costs at Deer Island include funding for the following projects: repair of AC pump mounting legs (\$20,000), resurfacing and balancing a spare Nordberg Engine crank (\$40,000), replacement of safety control valves on all Nordberg Engines (\$5,000), replacement of a roll-up door to a chlorine bay in the chlorine building (\$7,000), replacement of linoleum tiles in various areas of the treatment plant (\$14,224), replacement of lavatory fixtures and kitchen equipment (\$7,400) and repair of window frames throughout the plant (\$10,000).

Education, Training and Meetings

The budget in this cost category includes an incremental portion for tuition reimbursement of \$36,500 and \$7,170 for training programs for Water Quality staff. The majority of the training budget in Water Quality is for EPA sponsored seminars. Additional funds are budgeted for 24 staff to be trained in CPR at \$25 per person and for 24 staff to receive a three-day course in safety training at a cost of \$30 per person.

Professional Services

There is a large increase from the FY87 budget to the base budget for FY88, nearly all of it for laboratory services for Water Quality. Increased staffing will result in a greater number of industrial waste samples to be tested. The testing services are performed by an outside laboratory, and estimated costs reflect an increase in the number of samples tested. The Water Quality budget also includes estimated cost of bio-monitoring of plant effluent. The Authority's draft NPDES permit requires such monitoring, the cost of which was contained in the Deer and Nut Island budgets for FY87. \$200,000 has been included for maintenance engineering consultants.

Of the incremental amount, \$67,485 is for security services at Nut Island. In line with efforts to provide public access to the island, the Authority will need to assume responsibility for both public well-being and the security of its facilities. \$100,000 has been included in the Maintenance Engineering Department for engineering contracts required for the Division's planned maintenance projects in FY88.

Other Materials

The total increase in this line item is 5.6%, although the base budget is \$64,397 lower than the approved FY87 amount. Major changes to the base are the result of reductions in the cost of

purchasing equipment, particularly laboratory equipment which was included in the FY87 budget and an increase in vehicle expense due to the purchase of additional vehicles.

The incremental budget is for costs which will not recur in FY89. \$86,700 of the amount is for the Water Quality Department which plans to purchase 20 flow meters with 5 printer plotters to be used in collecting flow data from industrial users. The data is used in calculating rates and determining the industrial contribution to treatment plant flows. The Department also has budgeted for a storage trailer to house its valuable sampling equipment which is now stored in a small, overcrowded room at the Prison Point facility. The Authority's investment in this equipment should be protected through provision of adequate, safe storage space.

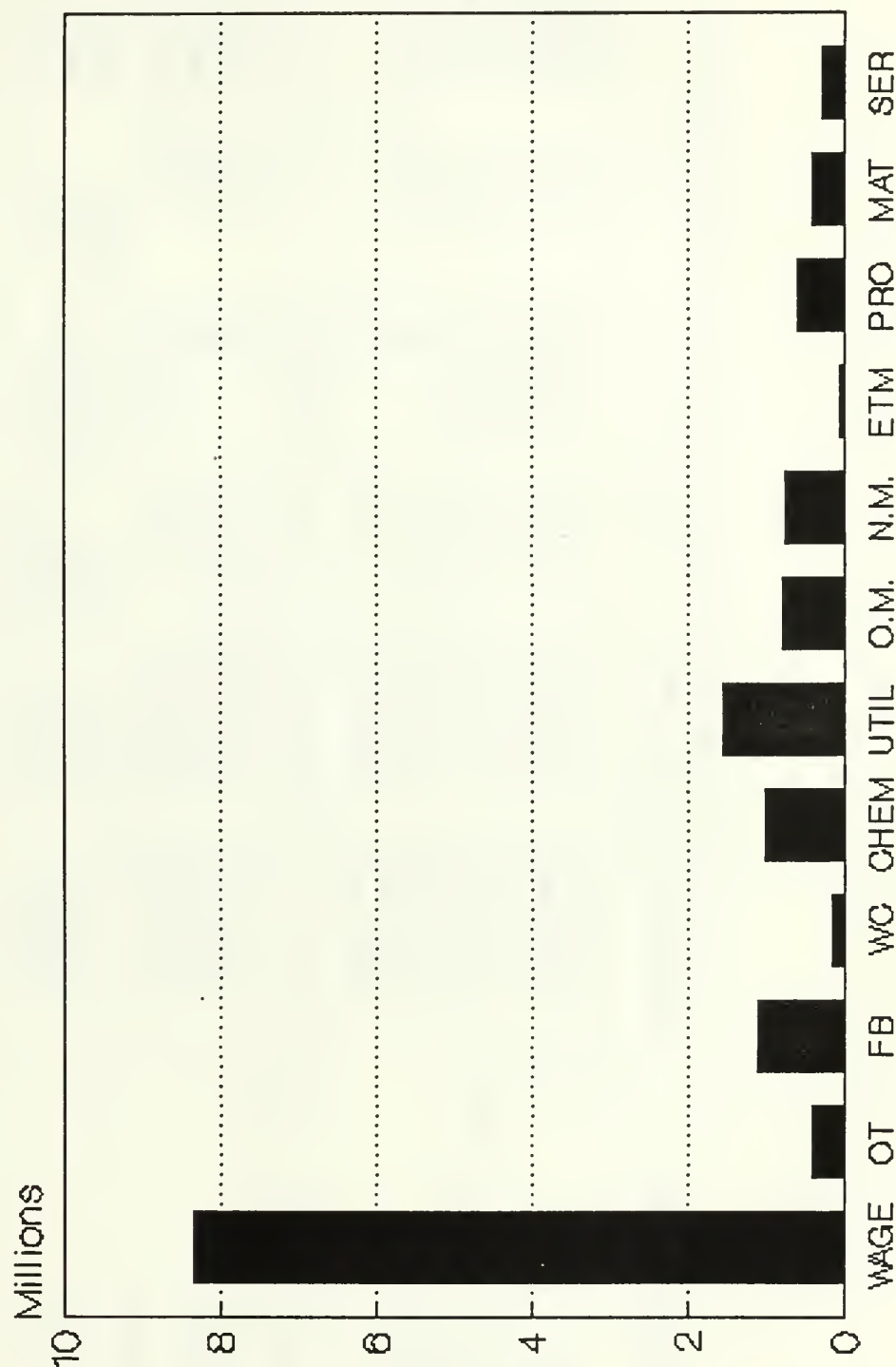
The additional \$12,000 in incremental costs is for furniture and office equipment for the Pumping Department which did not receive money for this purpose in the FY87 budget.

Other Services

The small increase in the Division's budget for other services is divided almost evenly between adjustments to the base budget and an incremental amount. The base has been reduced by amounts budgeted in FY87 for moving the Division to Charlestown and for partial year rental of space on N. Washington Street for the Water Quality Department. There is a further reduction of \$11,000 in printing costs for Water Quality which were one time or infrequent expenses. Increases to the base are in two areas, \$47,600 in increased costs for hauling of grit and screening from Nut Island and \$27,000 for telephone costs in the Pumping Department which were mistakenly left out of the FY87 budget.

The incremental amount budgeted in this line item is for a contract with an exterminator to perform rodent and pest control work at Division facilities. This program is the result of OSHA studies which identified potential health problems in some of the facilities and is part of the Authority's ongoing efforts to improve workplace health and safety. The contract is budgeted in the Division's Maintenance Engineering Department.

MWRA FY88 CURRENT EXPENSE BUDGET WATERWORKS DIVISION BY LINE ITEM



PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988

WATERWORKS DIVISION

EXPENSE LINE ITEM:	FY87 APPROVED BUDGET	FY88 BASE BUDGET	% CHANGE FROM FY87	FY88 INCREMENTAL BUDGET	% OF FY87 BUDGET	FY88 TOTAL BUDGET	% CHANGE FROM FY87
WAGES AND SALARIES	\$6,950,562	8,181,890	17.7%	\$155,084	2.2%	\$8,336,974	19.9%
OVERTIME	\$389,220	407,217	4.6%	\$0	0.0%	\$407,217	4.6%
FRINGE BENEFITS	\$753,614	1,095,748	45.4%	\$0	0.0%	\$1,095,748	45.4%
WORKERS' COMPENSATION	\$44,550	133,000	198.5%	\$0	0.0%	\$133,000	198.5%
TOTAL LABOR AND BENEFIT COST	\$8,137,946	\$9,817,855	20.6%	\$155,084	1.9%	\$9,972,939	22.5%
CHEMICALS	\$883,384	1,016,083	15.0%	\$0	0.0%	\$1,016,083	15.0%
ENERGY AND UTILITIES	\$1,550,005	1,540,641	-0.6%	\$0	0.0%	\$1,540,641	-0.6%
ONGOING MAINTENANCE	\$647,420	769,080	18.8%	\$0	0.0%	\$769,080	18.8%
NEW MAINTENANCE	\$928,200	0	-100.0%	\$739,300	79.6%	\$739,300	-20.4%
EDUCATION, TRAINING, & MEETINGS	\$35,615	37,400	5.0%	\$26,690	74.9%	\$64,090	80.0%
PROFESSIONAL SERVICES	\$747,070	389,850	-47.8%	\$195,000	26.1%	\$584,850	-21.7%
OTHER MATERIAL	\$440,803	316,381	-28.2%	\$78,600	17.8%	\$394,981	-10.4%
OTHER SERVICES	\$287,280	290,310	1.1%	\$0	0.0%	\$290,310	1.1%
TOTAL DIVISION BUDGET	\$13,657,723	14,177,600	3.8%	\$1,194,674	8.7%	\$15,372,274	12.6%

PROPOSED CURRENT EXPENSE BUDGET
FISCAL YEAR 1988
WATERWORKS DIVISION

EXPENSE LINE ITEM:	DIRECTOR'S		WATER		DIVISION
	OFFICE	ENGINEERING	METROPOLITAN	SUPPLY	TOTAL
WAGES AND SALARIES	\$907,771	\$688,390	\$3,623,417	\$2,881,706	\$8,336,974
OVERTIME	\$7,995	\$9,984	\$205,520	\$155,950	\$407,217
FRINGE BENEFITS	\$1,077,998	\$150	\$11,635	\$5,005	\$1,095,748
WORKERS' COMPENSATION	\$133,000	\$0	\$0	\$0	\$133,000
TOTAL: LABOR AND BENEFIT COST	\$2,126,764	\$698,524	\$3,840,572	\$3,042,661	\$9,972,939
CHEMICALS	\$0	\$0	\$0	\$1,009,438	\$1,016,083
UTILITIES AND ENERGY	\$0	\$0	\$1,432,419	\$105,450	\$1,540,641
ONGOING MAINTENANCE	\$50,800	\$5,000	\$494,000	\$202,480	\$769,080
NEW MAINTENANCE	\$0	\$0	\$400,000	\$316,100	\$739,300
EDUCATION, TRAINING, & MEETINGS	\$38,490	\$6,600	\$10,300	\$8,700	\$64,090
PROFESSIONAL SERVICES	\$0	\$510,000	\$42,350	\$32,500	\$584,850
OTHER MATERIAL	\$12,710	\$4,840	\$211,849	\$157,182	\$394,981
OTHER SERVICES	\$142,000	\$77,000	\$34,260	\$32,050	\$290,310
TOTAL PROPOSED BUDGET	\$2,370,764	\$1,302,964	\$6,465,750	\$4,906,561	\$15,372,274

Proposed FY88 Current Expense Budget

WATERWORKS DIVISION

Waterworks Division Budget Summary

The proposed budget for the Waterworks Division is 12.6% higher than the approved budget for FY87. The proportion of the Division budget allocated for personnel costs is 64.9% of the total, up from 59.6% of the Division's FY87 budget. Base personnel costs are significantly greater than they were in FY87; base costs in other expense categories are 21% less, due to the fact that all "new" maintenance is treated as an incremental cost. The 8.7% incremental cost increase is primarily for additional personnel, new maintenance projects and professional services.

Wages and Salaries

The Waterworks Division personnel to be hired during FY88 include 16 Station Attendants and 1 Storekeeper to be located at Cosgrove. The Storekeeper position has been approved by the Board of Directors as a part of the Division's reorganization. The Station Attendant positions are a new employee category in the Pumping Section of the Metropolitan Division. The new employees will back-up and assist the Diesel Power Plant Operators who now staff the Hyde Park, Brattle Court, Spot Pond and Brookline Pump Stations. The four stations are staffed in three shifts and on weekends and holidays, generally by a single individual. A primary reason for the addition of a second staff person is safety. It is considered a dangerous practice for only one person to tend rotating equipment.

The Division plans increasing automation of its pump facilities and conversion from diesel to electric equipment. However, it will be at least five years before this conversion occurs, at which time staff retraining or attrition of former positions will be planned. In the meantime, station staffing should include more than one person.

The proposed budget for overtime is just under \$20,000 higher than that approved for FY87. Overtime cost as a percentage of wage cost has been reduced.

Chemicals

The proposed budget for chemicals has been calculated based on usage projections of the Division and a price appreciation of 3%.

The cost of utilities and energy is based on the Division's usage projections and the pricing assumptions set forth in the Overview section of this document.

Ongoing Maintenance

The Division's proposed budget for Maintenance is \$1,508,380, a \$67,240 reduction (4.3%) from the \$1,575,620 budgeted for FY87. The base budget for ongoing maintenance is increased from FY87 by \$121,660 (18.8%). Changes to the base are as follows:

\$60,000	-	Culvert cleaning
50,000	-	Maintenance Materials Purchases
10,000	-	Rental of heavy equipment
14,100	-	Automotive maintenance
3,000	-	Laboratory equipment repair
9,860	-	Various increased maintenance efforts and price increases
(18,000)	-	Grass cutting services
(5,800)	-	Aqueduct fencing
<u>(1,500)</u>	-	Hoist replacement
\$121,660		

Costs of culvert cleaning and materials inventory were included in "new" maintenance in FY87. The culvert cleaning program is continuing and cost estimates have changed from \$40,000 to \$60,000 due to the difficulty of finding contractors for this type of work. The increased amount of maintenance materials purchases budgeted in FY87 was \$100,000 to begin the purchase an inventory of pipe and parts for equipment. Half of that amount is included in the base budget for FY88. Rental of heavy equipment was previously budgeted under the "other services" category. Grass cutting services will not be required in FY88 because of the purchase of equipment to be used by Division personnel.

New Maintenance

Projects budgeted under "new" maintenance make up the incremental portion of the Division's maintenance budget. The total cost for FY88 is \$739,300. Two programs planned by the Division, valve replacement and steel pipe corrosion evaluation, will be ongoing; annual costs will become part of the maintenance base budget in FY89.

The Division operates and maintains 3,200 valves in its Distribution section, many of which are in poor condition. The size of valves varies widely (from approximately 6 to 60 inches) as does the amount of work required to replace or rehabilitate them. \$10,000 for a design consultant retainer is budgeted under Professional Services in the Maintenance Engineering Department. A consultant will be selected in the Spring of 1987 to provide

services for difficult or complicated sites. Small valves will be replaced by Division personnel. Large valve replacement, work in difficult locations and some work involving pipes which cannot be taken out of service require outside contractors. \$100,000 for purchase of materials and \$100,000 for construction contractors has been included in the Metropolitan Department budget for this program. FY89 costs are projected to be the same as those in FY88.

The waterworks system includes approximately 57 miles of old, unlined steel pipe which is vulnerable to external corrosion. Corrosion causes pitting of the pipe and results in water leakage. The Division plans to increase its efforts to evaluate pipe corrosion and rehabilitate corroded pipe sections. Evaluation requires identification of sites to test, design and construction of test pits, sandblasting of the pipe for inspection, and testing for extent of damage to pipe and for the corrosivity of ambient conditions. Resulting recommendations are used to develop priorities for capitalized rehabilitation projects.

\$25,000 is budgeted for renewal of the corrosion consultant contract, and \$10,000 is included for test pit design. Both of these amounts are in the Professional Services budget of the Maintenance Engineering Department. \$150,000 is included in the "new" maintenance budget of the Metropolitan Department for construction of test pits and sandblasting of pipe.

The incremental portion of the Metropolitan Department maintenance budget also contains \$50,000 to purchase leak detection equipment. The major piece of equipment is a leak correlator at approximately \$40,000. This sophisticated electronic device which would be used by a trained MWRA staff technician to detect leaks in both the MWRA system and, as technical assistance to municipalities, in local systems. This incremental expense will not become part of the FY89 base budget.

\$316,100 is included in the Water Supply Department budget for discrete FY88 maintenance projects which will be undertaken and concluded in FY88. These expenses will not become part of the base maintenance budget in FY89.

\$35,600 is budgeted for a contractor to repair deteriorated metal work and trash screens on the seven bays used for diversion of the Ware River at the intake facility in Barre. Diversion could be jeopardized if these repairs are not made. \$4,500 is budgeted for repair of the vandal-damaged roof of the screen chamber at the Weston Aqueduct chlorination facility. A contractor will remove damaged tiles and replace them with shingles. \$30,000 is budgeted for repair of the granite block structure housing Shaft 8 of the Quabbin Aqueduct at the Ware River Intake. A masonry contractor will remove damaged mortar and repoint the granite structure to prevent water penetration. The cost of these projects totals \$70,100 and is budgeted under building services.

\$27,000 budgeted under specialized equipment services is the estimated cost of repairing the 5 K feeder lines which carry electricity generated at the Cosgrove Intake at the Wachusett Dam. A contractor will remove existing cable which has developed leaks and replace it. The maintenance budget for other services includes \$19,000 to construct an enclosed parking area for vehicles at the Lake Cochituate headquarters in order to safeguard new vehicles being acquired by the Division. The cost includes preparing, paving and fencing an area of approximately 6,000 square feet.

The FY87 Current Expense Budget contained two projects which the Authority chose to fund as a current expense rather than to capitalize and finance over a longer period of time. One of those projects was a multi-year "catch-up" program to replace badly deteriorated sluice gates at an estimated first year cost of \$300,000. As the work began on the sluice gate program, it became apparent that costs would be higher than originally estimated. The project will be included as a capital item, and the funds budgeted in FY87 will be used for purchase of stop planks which are required to provide a dry working area for sluice gate work. Additional stop planks for use in the system will also be purchased.

\$225,000 is proposed for the rehabilitation of Echo Bridge which carries the Sudbury Aqueduct across the Charles River. The structure was built in the 1870s with a series of arched spans patterned after the old Roman aqueducts and has been designated a National Historic Landmark. \$25,000 is included in Professional Services for inspection, evaluation of structural integrity and design of the rehabilitation. \$200,000 is included in Other Maintenance Services of the Water Supply Department budget for the rehabilitation itself. Although this project meets the criteria to be included in the capital improvement program, the Authority is proposing to pay for this project with FY88 revenue rather than finance it over the life of its bonds.

The proposed incremental maintenance budget proposes three projects at the Clinton Wastewater Treatment Plant which should no longer be deferred. \$3,200 is budgeted to cover approximately 3,200 square feet of roadways with bituminous pavement. The pavement will reduce time spent on road maintenance and snow removal. \$6,000 has been budgeted under Plant and Machinery Services for the services of masonry and welding contractors who will repair concrete walls in such areas as settling tanks and filter basins and will repair broken sludge collectors, railings, piping etc. Two sludge pumps must be replaced at Clinton. They are 30 years old, and it is difficult and increasingly expensive to obtain replacement parts to repair them. The cost of replacement is estimated to be \$14,000.

Education Training and Meetings

The incremental increase in this Division is for tuition reimbursement and for new training programs for Division personnel. The new training includes leak detection and use of the leak correlator, pilot tube use and maintenance, seminars on the Safe Drinking Water Act and safety courses for personnel in the Transmission Section.

Professional Services

\$584,850 is proposed for Professional Services for the Division, a 21.7% decrease from that of last year. Pilot Meter testing, the internal pipe corrosion study and sluice gate engineering are not planned for FY88 and have been removed from the base budget. An additional \$50,000 is budgeted for the Demand Management Program. The proposed incremental budget of \$195,000 includes \$70,000 for the projects included in new maintenance and \$25,000 for an engineering consultant to study and design remedial measures to prevent the build-up of "frazil ice" on the screens of the Cosgrove Intake during winter months. This ice slows the flow of water from the Wachusett Reservoir and jeopardizes continuous water supply. An additional \$100,000 is for assistance to municipalities in leak detection. The Division is proposing classroom and field training for local water personnel and preparation of a manual for municipalities.

Other Materials

The \$394,981 proposed in this budget category is \$45,822 (10.4%) less than the FY87 amount. \$316,381 is the base budget; \$78,600 is incremental and, for the most part, represents one time or infrequent expenditures. Included in the incremental portion are \$5,000 for computer furniture in the statistical section and a variety of equipment in the Metropolitan and Water Supply Departments including brush cutters, chainsaws, copier machine, 1 1/2 inch portable pump, electric blowers, portable generators, gas detector, telescoping staging, portable hydraulic cranes and various testing and calibration instruments for the metering and telemetry systems.

Other Services

\$290,310 proposed in this budget category is an increase of \$3,030 from FY87. The significant changes in this budget area are reductions in copy machine rental expense and costs of moving the Division to Charlestown, the transfer of heavy equipment rental to the maintenance category and a proposed increase in Authority support of the American Waterworks Association Research Foundation from \$25,000 to \$60,000.



Massachusetts Water Resources Authority
Proposed Current Expense Budget
Fiscal Year 1988

APPENDIX

Additional Personnel Positions
Fiscal Year 1988



	FY 88	JAN.	FEB.	MAR.	APR.	MAY	JUNE	TOTAL
JULY								
AUG.								
SEPT.								
OCT.								
NOV.								
DEC.								

Affirmative Action

Prl. Compl. Monitor	1	1
		2

Staff Auditor	2
Junior Auditor	2
Secretary I	1

TOTAL EXECUTIVE	6	1	7
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Budget

Cap. Budget Monitor	1				1
Planning Analyst		1			1
Comptroller					1
Payroll Assistant	1			1	2
Purchasing Buyer				1	1
Inventory Contr. Mgr.	1				1
Inventory Clerk					1

Systems Analyst	1
Data Entry Clerk	1
Programmer	1
Data Base Manager	1

TOTAL A & F	3	1	3	1	1	1
						11





	FY 88	JAN.	FEB.	MAR.	APR.	MAY	JUNE	TOTAL
JULY								
AUG.								
SEPT.								
OCT.								
NOV.								
DEC.								

Pumping Service Superint.
Collection - North Distrct.
Collection - Winchester

Carpenter 1

Collection - South Distrct.

Sewer Maint. Foreman

Magon

Laborer

Nut Island - Maintenance

Machinist

Deer Island - Sup. & Staff

Mechanical Engineer

Safety Coordinator

Deer Island - Maintenance

Plumber/Steamfitter

STP Electrician

STP Maint. Mech.

Asst. Mech. Engr.

Skilled Laborer

Head Groundskeeper

TOTAL SEWERAGE

16

CONSTRUCTION

Division Director

Construction Asst.

Constr. Coord.

TOTAL CONSTRUCTION

1

1

9

NEW HIRES
POSITION TITLE

[illegible]

SUPPORT DIVISION

[illegible]

TOTAL AUTHORITY	25	4	13	6	6	9	5	5	7	3	0	4	87
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FISCAL YEAR 1988 NEW POSITIONS
POSITION CONTROL REGISTER

EXECUTIVE :

DEPT: INTERNAL AUDIT

POSITION TITLE	FY88 ANNUAL SALARY	FY88 BUDGETED SALARY	FY88 MONTH OF HIRE
STAFF AUDITOR	\$30,000	\$30,000	JULY
STAFF AUDITOR	\$30,000	\$30,000	JULY
JUNIOR AUDITOR	\$23,000	\$23,000	JULY
JUNIOR AUDITOR	\$23,000	\$23,000	JULY
SECRETARY 1	\$22,500	\$22,500	JULY
DEPT SUB TOTAL :	\$128,500	\$128,500	

DEPT: AFFIRMATIVE ACTION AND COMPLIANCE

PAYROLL COMPLIANCE MONITOR
PAYROLL COMPLIANCE MONITOR

DEPT SUB TOTAL :

EXECUTIVE DIVISION TOTAL :

ADMINISTRATION AND FINANCE DIVISION :
DEPT: BUDGET

PLANNING ANALYST
CAPITAL BUDGET MONITOR

DEPT SUB TOTAL :

DEPT: TREASURY
COST CENTER: COMPTROLLER

PAYROLL ASSISTANT
PAYROLL ASSISTANT

COST CENTER SUB TOTAL :

DEPT SUB TOTAL :

DEPT: PROCUREMENT
COST CENTER: PURCHASING

BUYER
INVENTORY CONTROL MANAGER
INVENTORY CLERK

COST CENTER SUB TOTAL :

DEPT SUB TOTAL :

DEPT: MANAGEMENT INFORMATION
SYSTEMS

SYSTEMS ANALYST
COMPUTER PROGRAMMER
DATA ENTRY CLERK
DATA BASE MANAGER

DEPT SUB TOTAL :

ADMINISTRATION AND FINANCE DIVISION

TOTAL :

\$335,500 \$273,334

FISCAL YEAR 1988 NEW POSITIONS
POSITION CONTROL REGISTER

POSITION TITLE	FY88 ANNUAL SALARY	FY88 BUDGETED SALARY	FY88 MONTH OF HIRE
ENGINEERING DIVISION :			
DEPT: DIRECTOR'S OFFICE			
SECRETARY III	\$17,500	\$8,750	JAN
DEPT SUB TOTAL :	\$17,500	\$8,750	
DEPT: WATER			
PROJECT MANAGER	\$37,000	\$30,834	SEPT
PROJECT MANAGER	\$37,000	\$9,250	APRIL
STAFF ENGINEER	\$25,000	\$14,583	DEC
DEPT SUB TOTAL :	\$99,000	\$54,667	
DEPT: WASTEWATER			
PROGRAM MANAGER	\$45,000	\$41,250	AUG
PROJECT MANAGER	\$37,000	\$30,833	SEPT
PROJECT MANAGER	\$37,000	\$24,667	NOV
PROJECT MANAGER	\$37,000	\$15,417	FEB
PROJECT ENGINEER	\$33,000	\$11,000	MAR
PROJECT ENGINEER	\$33,000	\$24,750	OCT
PROJECT ENGINEER	\$33,000	\$19,250	DEC
STAFF ENGINEER	\$25,000	\$12,500	JAN
STAFF ENGINEER	\$25,000	\$6,250	APRIL
DEPT SUB TOTAL :	\$305,000	\$185,917	
DEPT: TECHNICAL SUPPORT			
PROJECT MANAGER	\$37,000	\$33,917	AUG
DEPT SUB TOTAL :	\$37,000	\$33,917	
DEPT: ADMINISTRATIVE SUPPORT			
EXECUTIVE ASSISTANT, ADMINISTRATION	\$45,000	\$33,750	OCT
GRANTS SPECIALIST	\$30,000	\$25,000	SEPT
INVOICE EXAMINER	\$30,000	\$20,000	NOV
DEPT SUB TOTAL :	\$105,000	\$78,750	
ENGINEERING DIVISION TOTAL :	\$563,500	\$362,001	
CONSTRUCTION DIVISION :			
DEPT: DIRECTOR'S OFFICE			
CONSTRUCTION ASSISTANT	\$45,000	\$45,000	JULY
CONSTRUCTION COORDINATOR	\$45,000	\$33,750	OCT
DEPT SUB TOTAL :	\$90,000	\$78,750	
CONSTRUCTION DIVISION TOTAL :	\$90,000	\$78,750	

FISCAL YEAR 1986 NEW POSITIONS
POSITION CONTROL REGISTER

POSITION TITLE	FY86 ANNUAL SALARY	FY86 BUDGETED SALARY	FY86 MONTH OF HIRE
LAW DIVISION :			
SENIOR STAFF COUNSEL	\$42,000	\$38,500	AUG
STAFF COUNSEL-LITIGATION	\$40,000	\$40,000	JULY
LAW DIVISION TOTAL :	\$82,000	\$78,500	
SUPPORT SERVICES DIVISION :			
DEPT: DIRECTOR'S OFFICE	\$45,000	\$45,000	JULY
DEPT SUB TOTAL :	\$45,000	\$45,000	
DEPT: RISK MANAGEMENT	\$35,000	\$20,417	DEC
DEPT SUB TOTAL :	\$35,000	\$20,417	
DEPT: VEHICLE MAINTENANCE	\$35,000	\$35,000	JULY
MASTER MECHANIC	\$25,000	\$25,000	JULY
MOTOR EQUIPMENT REPAIRMAN	\$20,000	\$20,000	JULY
MOTOR EQUIPMENT REPAIRMAN	\$20,000	\$20,000	JULY
WELDER	\$23,000	\$23,000	JULY
TIRE REPAIRMAN	\$20,000	\$20,000	JULY
LUBRICATOR	\$20,000	\$20,000	JULY
LUBRICATOR	\$20,000	\$20,000	JULY
LABORER	\$16,000	\$16,000	JULY
LABORER	\$16,000	\$16,000	JULY
TRUCK DRIVER	\$20,000	\$20,000	JULY
SECRETARY	\$18,600	\$18,600	JULY
DEPT SUB TOTAL :	\$253,600	\$253,600	
SUPPORT SERVICES DIVISION TOTAL :	\$333,600	\$319,017	

FISCAL YEAR 1988 NEW POSITIONS
POSITION CONTROL REGISTER

POSITION TITLE	FY88 ANNUAL SALARY	FY88 BUDGETED SALARY	FY88 MONTH OF HIRE
SEWERAGE DIVISION :			
DEPT: COLLECTION SYSTEMS			
COST CENTER: WINCHESTER YARD			
COST CENTER SUB TOTAL :			
DEPT: COLLECTION SYSTEMS			
COST CENTER: SOUTH SEWERAGE			
DISTRICT			
COST CENTER SUB TOTAL :			
DEPT SUB TOTAL :			
DEPT: NUT ISLAND			
COST CENTER SUB TOTAL :			
DEPT SUB TOTAL :			
DEPT: DEER ISLAND			
COST CENTER: SUPERINTENDENT			
COST CENTER SUB TOTAL :			
DEPT: DEER ISLAND			
COST CENTER: MAINTENANCE			
COST CENTER SUB TOTAL :			
DEPT SUB TOTAL :			
SEWERAGE DIVISION TOTAL :			

FISCAL YEAR 1988 NEW POSITIONS
POSITION CONTROL REGISTER

POSITION TITLE	FY88 ANNUAL SALARY	FY88 BUDGETED SALARY	FY88 MONTH OF HIRE
WATERWORKS DIVISION :			
DEPT: METROPOLITAN			
COST CENTER: PUMPING			
STATION ATTENDANT	\$17,320	\$14,433	SEPT
STATION ATTENDANT	\$17,320	\$14,433	SEPT
STATION ATTENDANT	\$17,320	\$14,433	SEPT
STATION ATTENDANT	\$17,320	\$14,433	SEPT
STATION ATTENDANT	\$17,320	\$10,103	DEC
STATION ATTENDANT	\$17,320	\$10,103	DEC
STATION ATTENDANT	\$17,320	\$10,103	DEC
STATION ATTENDANT	\$17,320	\$10,103	DEC
STATION ATTENDANT	\$17,320	\$5,773	MAR
STATION ATTENDANT	\$17,320	\$5,773	MAR
STATION ATTENDANT	\$17,320	\$5,773	MAR
STATION ATTENDANT	\$17,320	\$5,773	MAR
STATION ATTENDANT	\$17,320	\$1,443	JUNE
STATION ATTENDANT	\$17,320	\$1,443	JUNE
STATION ATTENDANT	\$17,320	\$1,443	JUNE
STATION ATTENDANT	\$17,320	\$1,443	JUNE
COST CENTER SUB TOTAL :	\$277,120	\$127,013	
DEPT: METROPOLITAN			
COST CENTER: DISTRIBUTION			
TECHNICIAN	\$26,000	\$13,000	JAN
COST CENTER SUB TOTAL :	\$26,000	\$13,000	
DEPT SUB TOTAL :	\$303,120	\$140,013	
DEPT: WATER SUPPLY			
COST CENTER: TRANSMISSION			
STOREKEEPER	\$15,071	\$15,071	JULY
DEPT SUB TOTAL :	\$15,071	\$15,071	
WATERWORKS DIVISION TOTAL :	\$318,191	\$155,084	

MASSACHUSETTS WATER RESOURCE AUTHORITY TOTAL :

\$2,234,177 \$1,631,243

PROPOSED FY88 CURRENT EXPENSE BUDGET
 PROPOSED STAFFING LEVELS

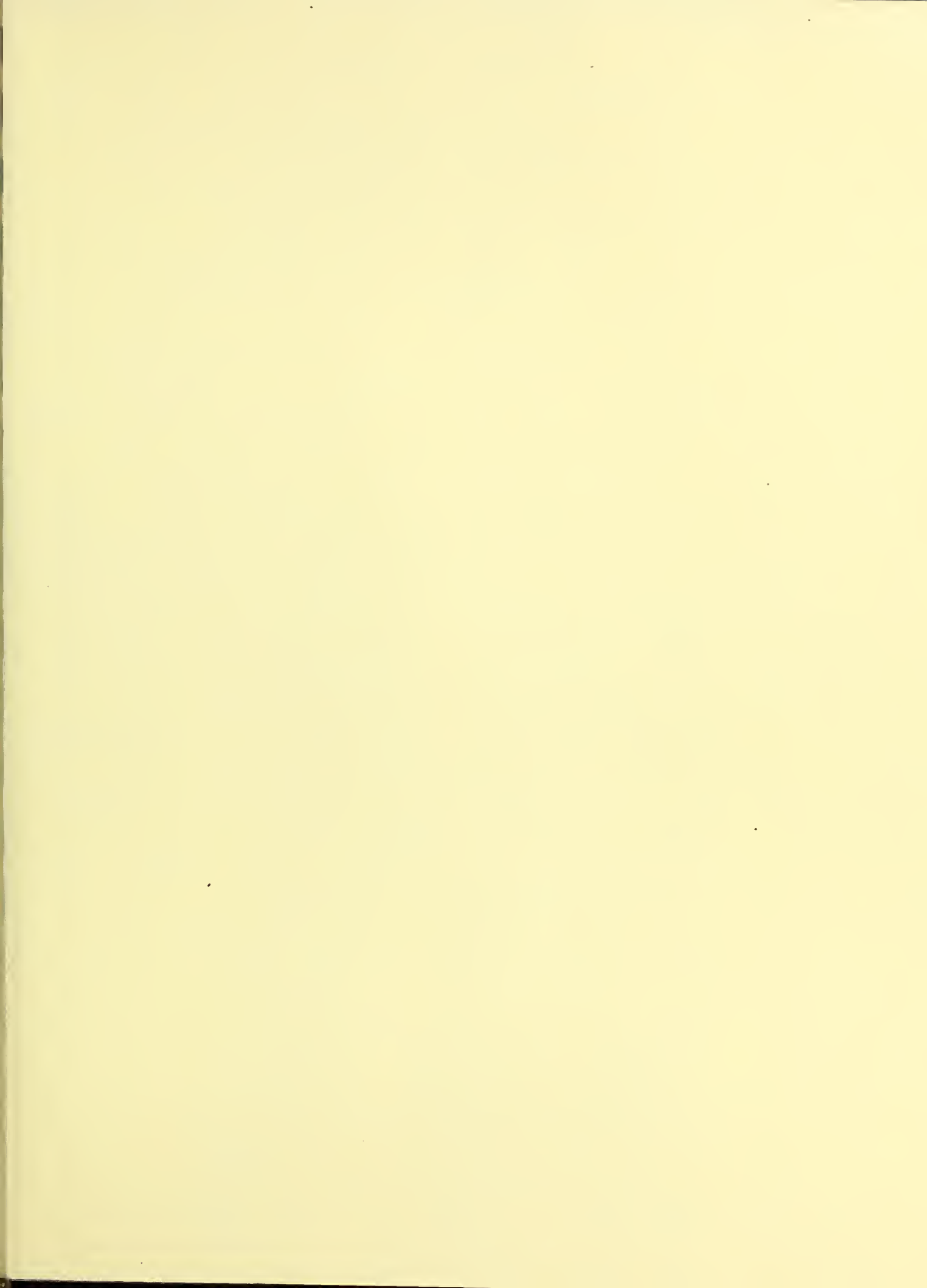
DIVISION	COST CENTER	DEC PCR PLANNED 6/30/87	PROPOSED 6/30/88
-----	-----	-----	-----
ENGINEERING			
	DIRECTOR'S OFFICE	3	4
	WATER	10	13
	WASTEWATER	19	28
	TECHNICAL SUPPORT	11	12
	ADMIN. SUPPORT	9	12
	TOTAL DIVISION	52	69
	-----	----	----
CONSTRUCTION			
	DIRECTOR'S OFFICE	10	12
	WASTEWATER	26	26
	WATER	21	21
	TOTAL DIVISION	57	59
	-----	----	----
SUPPORT			
	DIRECTOR'S OFFICE	3	4
	RISK MANAGEMENT	4	5
	VEHICLE MAINTENANCE	0	12
	TOTAL DIVISION	7	21
	-----	----	----
TOTAL AUTHORITY		1192	1279
PERSONNEL TO BE HIRED			87

PROPOSED FY88 CURRENT EXPENSE BUDGET
PROPOSED STAFFING LEVELS

DIVISION	COST CENTER	DEC PCR PLANNED 6/30/87	PROPOSED 6/30/88
-----		-----	-----
SEWERAGE			
	DIRECTOR'S OFFICE	18	18
	WATER QUALITY	48	48
	MAINTENANCE ENGINEERING	11	11
	PUMPING		
	SUPERINTENDENT	10	10
	SUPPORT	25	25
	PUMP STATIONS	74	74
	CSOs	21	21
	COLLECTION SYSTEM		
	SUPERINTENDENT	3	3
	NORTH DISTRICT	31	31
	WINCHESTER YARD	3	4
	SOUTH DISTRICT	19	22
	NUT ISLAND		
	SUPERINTENDENT	7	7
	OPERATIONS	25	25
	MAINTENANCE	48	49
	STORES	3	3
	LABORATORY	3	3
	DEER ISLAND		
	SUPERINTENDENT	9	11
	OPERATIONS	104	104
	MAINTENANCE	95	104
	STORES	5	5
	LABORATORY	6	6
	DIVISION TOTAL	568	584
	-----	----	----
WATERWORKS			
	DIRECTOR'S OFFICE	16	16
	ENGINEERING		
	ADMINISTRATION	3	3
	PROGRAM MANAGEMENT	8	8
	TECHNICAL SUPPORT	10	10
	METROPOLITAN		
	ADMINISTRATION	3	3
	PUMPING	53	69
	DISTRIBUTION	96	97
	MAINTENANCE	19	19
	WATER SUPPLY		
	ADMINISTRATION	3	3
	TRANSMISSION	113	114
	WATER QUALITY	31	31
	CLINTON	12	12
	DIVISION TOTAL	367	385
	-----	----	----

PROPOSED FY88 CURRENT EXPENSE BUDGET
PROPOSED STAFFING LEVELS

DIVISION	COST CENTER	DEC PCR PLANNED 6/30/87	PROPOSED 6/30/88
-----	-----	-----	-----
EXECUTIVE			
EXECUTIVE OFFICE		6	6
INTERNAL AUDIT		5	10
PUBLIC AFFAIRS		13	13
AFFIRMATIVE ACTION		7	9
BOARD OF DIRECTORS		2	2
TOTAL EXECUTIVE		33	40
		----	----
LAW		18	20
		----	----
ADMIN. AND FINANCE			
DIRECTOR'S OFFICE		3	3
PERSONNEL			
	PERSONNEL	18	18
	LABOR RELATIONS	4	4
ADMINIS. SERVICES		23	23
BUDGET		8	10
TREASURY			
	TREASURER	6	6
	COMPTROLLER	13	15
PROCUREMENT			
	PURCHASING	6	9
	CONTRACT ADMIN.	6	6
MIS		3	7
TOTAL DIVISION		90	101
		----	----

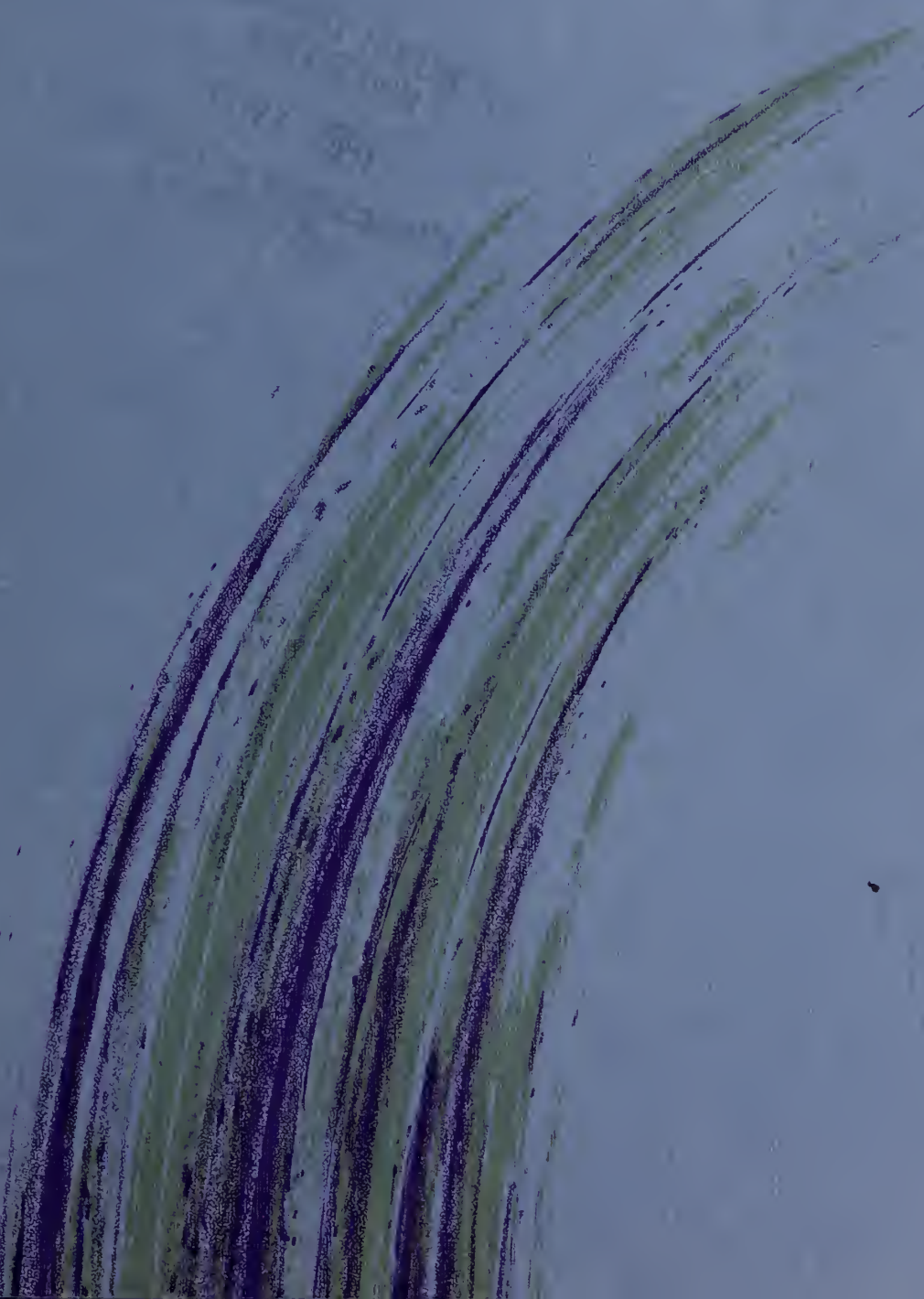


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Massachusetts Water Resources Authority

Current Expense Budget • Fiscal Year 1989

Paul F. Levy • Executive Director



Massachusetts Water Resources Authority

CURRENT EXPENSE BUDGET

FISCAL YEAR 1989

Paul F. Levy
Executive Director
June 22, 1988

Budget Department
Finance and
Development Division

Prepared under the direction of Paul F. Levy
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Transmitted under the provisions of Act No. 10

By the Chief Clerk of the Court

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Anthony Brown, Attorney
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Anthony Brown, Attorney

Respectfully Submitted

Anthony Brown, Attorney
Anthony Brown, Attorney

Massachusetts Water Resources Authority

BOARD OF DIRECTORS

James S. Hoyte, Chairman

Paul N. Anderson

John Carroll, Vice Chairman

Robert Ciolek

Lorraine Downey

Anthony Fletcher

Charles Lyons, Secretary

Samual Mygatt

Margaret Riley

Walter J. Ryan, Jr.

Jonathan Souweine

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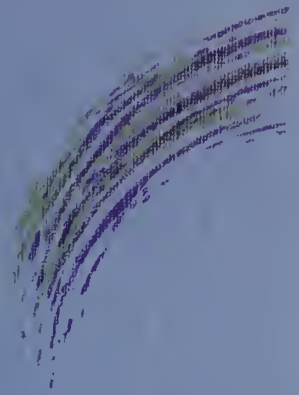
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Executive Summary



Massachusetts Water Resources Authority

FY89 Current Expense Budget

Executive Summary

Authority Mission

The mission of the Massachusetts Water Resources Authority is to provide wholesale water and sewerage services to communities in the Boston metropolitan area. These services include delivery of potable water and the collection, treatment and disposal of wastewater. The Authority was created to improve the effectiveness of these public services, to conserve water resources and to improve the water quality of Boston Harbor through sound system management and capital improvements.

Authority Direction

The Authority began operations on July 1, 1985. Since that time it has assembled many of the resources required to carry out its mission and has assessed the magnitude of its responsibilities. Public understanding and support are critical to the success of the Authority. The MWRA's Executive Director has articulated priorities for FY89 which have two broad purposes, to minimize future cost increases and to increase public awareness of the Authority's tasks which can be accomplished only with broad public participation and support.

FY89 Budget Format

One indication of the Authority's direction is an annual budget which begins to present the results that can be anticipated from the Authority's efforts to provide environmentally sound water and sewerage services. The Authority's Advisory Board, which represents those who use and pay for MWRA services, has encouraged the Authority to adopt budget practices which allow the public to evaluate the progress of the MWRA. The FY89 Current Expense Budget marks an important first step in that direction.

Performance Budgeting

The budget for FY89 describes major Authority programs, their purpose and performance objectives, and the resources which the Authority proposes to allocate to each program in order to accomplish the stated performance outcomes. For the most part, programs have been kept congruent with responsibility centers in the Authority's table of organization. This close relationship between programs and organizational units will help to maintain and strengthen managerial

responsibility and accountability for program performance and for resource management.

Program
Priorities

Seven programs have been identified by the Executive Director of the Authority as priorities for FY89. These priority program categories have been chosen because of their direct relationship to the Authority's primary goals and because of their potential to reduce future costs. Most of these programs require the effort of several of the Authority's organizational units. All will be allocated significant additional resources in FY89, and some will be built over the next several years. The seven priority programs are:

1. Management of Capital Programs
2. Toxics Control and Reduction
3. Infiltration and Inflow Reduction
4. Water Conservation
5. Public Awareness
6. Financial Planning and Control
7. Preventive Maintenance

Expense
Summary

A summary description of the activities and FY89 objectives of each of these priority programs is included at the end of this Executive Summary.

The FY89 Current Expense Budget presents \$146.3 million in projected costs matched by an equal amount of revenue. These amounts, by line item, are shown in the Table on the following page. The cost of the Authority's programs is \$88.6 million, and the current portion of the Authority's capital costs is \$45.4 million. These two categories account for 92 percent of the total expense budget. Of the remaining amount, \$8.4 million or approximately six percent of budgeted expenses is for insurance, mitigation payments to impacted communities and the Authority's share of the cost of managing the watersheds which produce the area's water supply. Approximately \$4 million, 2.7 percent of the total, is to be reserved for operating emergencies or unanticipated cost increases.

Revenue
Summary

About 96 percent of Authority revenue is from user charges paid by those communities who receive water and sewerage services from the Authority. \$47.4 million is provided by water users, including those communities with which the Authority has contractual agreements; \$96.1 million is paid by those communities which receive sewerage service. Other Authority income is projected to be \$6.3 million in FY89.

Table 1

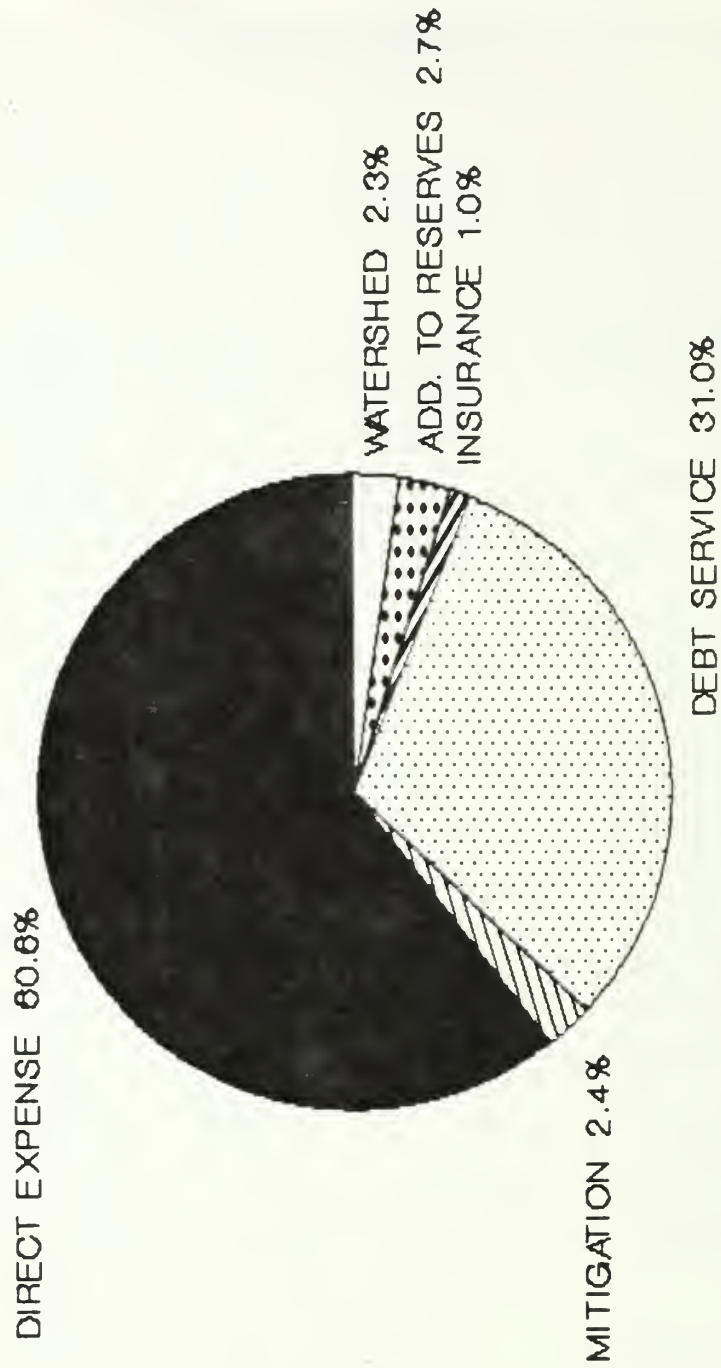
MASSACHUSETTS WATER RESOURCES AUTHORITY
CURRENT EXPENSE BUDGET SUMMARY

	FY88 BUDGET	FY89 BUDGET	INCREASED AMOUNT	PERCENTAGE INCREASE
REVENUE LINE ITEMS				

RATE REVENUE REQUIREMENTS	\$100,199,367	\$137,778,113	\$37,578,746	37.5%
CONTRACT INCOME	1,560,000	2,200,000	640,000	41.0%
INVESTMENT INCOME	3,000,000	4,300,000	1,300,000	43.3%
OTHER INCOME	603,000	2,000,000	1,397,000	231.7%
RATE CREDIT FROM PREVIOUS YEAR	1,440,110	0	(1,440,110)	-100.0%
TOTAL REVENUE:	\$106,802,477	\$146,278,113	\$39,475,636	37.0%
EXPENSE LINE ITEMS				

WAGES AND SALARIES	\$35,396,874	\$47,776,731	\$12,379,857	35.0%
OVERTIME	2,181,892	2,521,766	339,874	15.6%
FRINGE BENEFITS	3,745,980	4,574,650	828,670	22.1%
WORKERS' COMPENSATION	596,400	816,200	219,800	36.9%
TOTAL LABOR COSTS:	\$41,921,146	\$55,689,347	\$13,768,201	32.8%
CHEMICALS	\$4,173,805	\$4,944,502	\$770,697	18.5%
UTILITIES AND ENERGY	4,455,317	6,019,963	1,564,646	35.1%
ONGOING MAINTENANCE	3,145,770	3,692,516	546,746	17.4%
NEW MAINTENANCE	1,173,394	1,596,405	423,011	36.1%
EDUCATION, TRAINING & MEETINGS	592,285	787,298	195,013	32.9%
PROFESSIONAL SERVICES	4,448,851	6,141,380	1,692,529	38.0%
OTHER MATERIALS	1,690,421	2,035,603	345,182	20.4%
OTHER SERVICES	6,145,738	7,670,099	1,524,361	24.8%
TOTAL DIRECT EXPENSES:	\$67,746,727	\$88,577,113	\$20,830,386	30.7%
INSURANCE	\$1,356,121	\$1,522,000	\$165,879	12.2%
WATERSHED REIMBURSEMENT	2,476,000	3,385,000	909,000	36.7%
MITIGATION	0	3,523,000	3,523,000	N/A
DEBT SERVICE	33,302,848	45,360,000	12,057,152	36.2%
ADDITIONS TO RESERVES	1,920,781	3,911,000	1,990,219	103.6%
TOTAL EXPENSES:	\$106,802,477	\$146,278,113	\$39,475,636	37.0%

MASSACHUSETTS WATER RESOURCES AUTHORITY PROPORTION OF CURRENT EXPENSE BUDGET BY LINE ITEM CATEGORY IN FY89



Major
Program
Costs

Approximately 63 cents of each dollar spent for Authority programs pays for the staff responsible for operating and maintaining the waterworks and sewerage systems, managing the Authority's capital improvements or providing essential support services. An additional penny of each program dollar is earmarked for staff training and development. The high proportion of expense for labor is typical of service sector enterprises.

Just over 12 cents of each dollar is spent on the chemicals and energy required to deliver water and wastewater services; nearly six cents buys maintenance materials and maintenance services in addition to those performed by Authority staff; 18 cents is for the purchase of other goods and services required to meet program objectives.

Capital
Costs

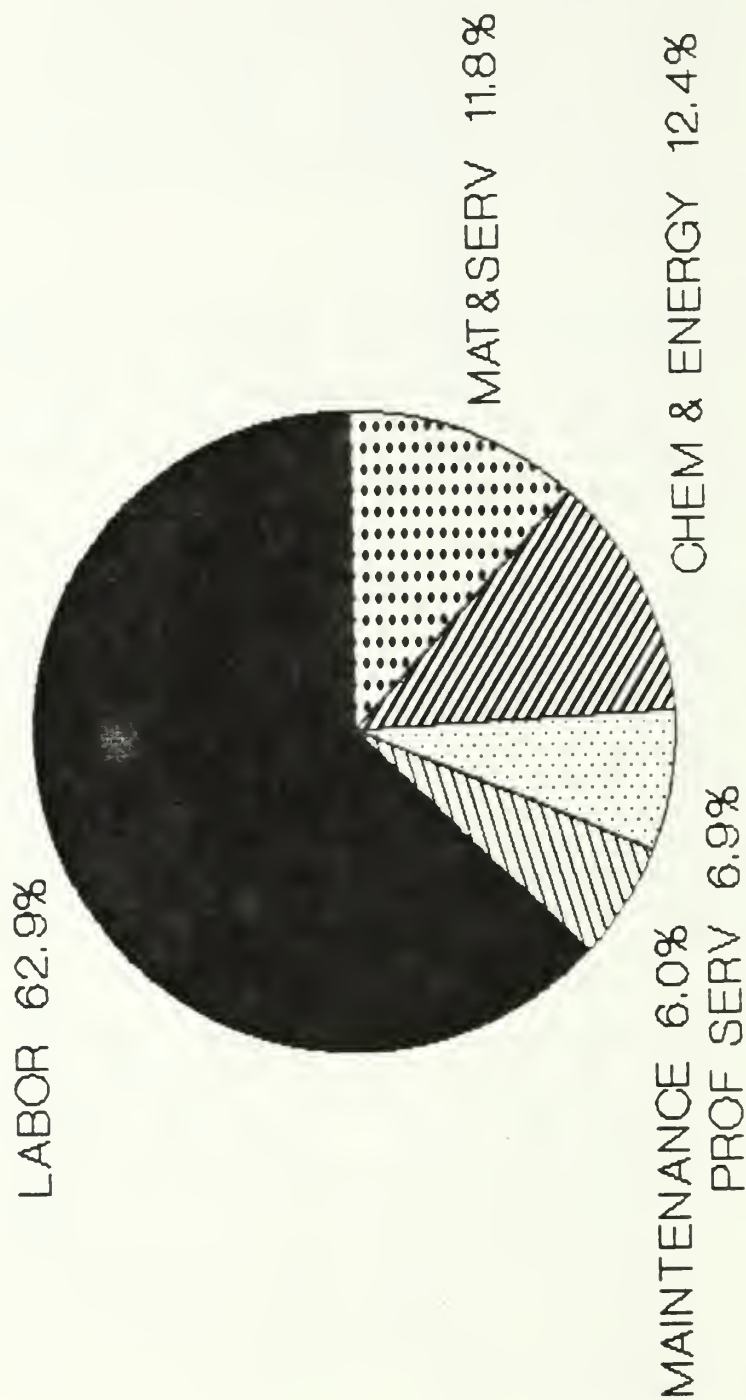
The Authority's capital improvement program describes 100 projects slated for investment. Some system improvements are relatively inexpensive. However, those which will end the pollution of Boston Harbor are rivaled for complexity and estimated cost only by the major transportation investments required to depress the central artery and construct an additional tunnel under the Harbor. \$639 million in capital expenditures is proposed for the three years ending on June 30, 1990. Capital costs and the cost of borrowed funds are paid over a number of years, with a portion included in each year's current expense budget. The FY89 portion, \$45.4 million, is nearly one-half as much as the total cost of all Authority program expenses.

Major
Cost
Increases

Total expenses in the budget for FY89 are nearly \$39.5 million greater than those planned for FY88. Resources for programs outlined in this budget and the current portion of capital costs are budgeted to rise 30.7 and 36.2 percent respectively; they account for \$33 million or 83 percent of the growth in total expenses. Labor cost increases account for the largest dollar rise in costs. The growth is attributable primarily to increases in wage rates, budgeting full annual salaries for the 332 additional positions to be filled in FY88 and partial year salaries for 231 new positions to be filled in FY89.

The greatest percentage increases are for environmental mitigation which was included in the capital budget in FY88 and for additions to reserves. As part of the Authority's obligations to its note holders, approximately 19% of the increase in annual operating

MASSACHUSETTS WATER RESOURCES AUTHORITY
PROPORTION OF DIRECT EXPENSE BUDGET
BY LINE ITEM CATEGORY IN FY89



expenditures is added to operating reserves each year. The substantial increase in budgeted expenses for FY89 therefore requires substantial additions to the operating reserve.

Rate
Increases

The 10.4 percent rate increase in FY88 followed increases of 28 percent and 54.4 percent in FY86 and FY87 respectively. For FY89, the increase in rate revenue is 37.5 percent. Proposed user charges for sewerage services are increasing from \$66.8 million to \$92.5 million or 38.5 percent. Proposed water rate revenue is up 35.5 percent, from \$33.4 million in FY88 to \$45.2 million for the year ending June 30, 1989.

Wholesale rate increases to user communities are expected to be incorporated into retail rates charged to residential, commercial and industrial customers who use municipal water and sewerage services. Although rate-setting methodologies and practices differ from community to community, the Authority estimates that the increase in wholesale charges will add approximately \$45 per year or less than \$4 per month to the average household water and sewer bill. Cost increases for operations, maintenance and improvement of municipal water and sewer systems will also add to the retail bill. In addition, variations in the use of services and in rate practices will result in community rate increases which vary from the average.

As the Authority redresses years of water and sewerage system neglect, it is committed to working with its user communities to manage the rate increases which are expected to continue through the next dozen years. In FY86 and FY88, rate increases were deliberately reduced through rate stabilization mechanisms to allow communities to plan for larger increases in FY87 and FY89. While such techniques do not decrease the multi-year cost of service, they can help to smooth or shift rate impacts in a given year.

Budget
Projections

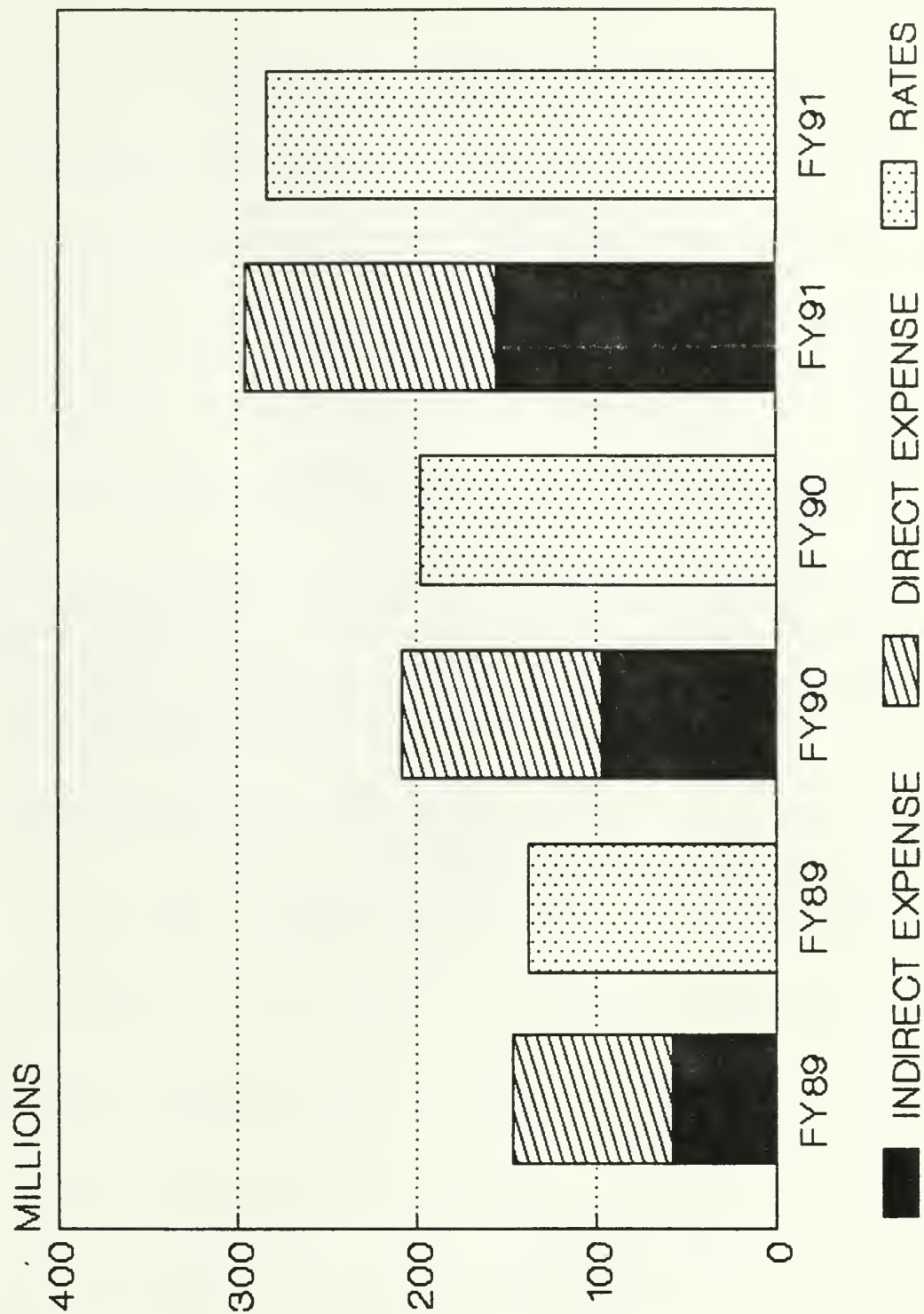
Revenue and expenditure projections for FY90 and FY91 are summarized in the table on the following page. A combined water and sewer rate increase of 44.3 percent is projected for FY90 based upon anticipated total current expenses of \$208.9 million. For FY91, total current expenses are projected to be \$294.8 million resulting in a rate increase of 42.6 percent. Continued increases in debt service and related costs of the MWRA's capital program is the major contributing factor in the rate increases projected for these years.

Table 2

MASSACHUSETTS WATER RESOURCES AUTHORITY
REVENUE AND EXPENSES: ADOPTED FY89 AND PROJECTED FY90 AND FY91

	FY89	PERCENTAGE INCREASE	FY90	PERCENTAGE INCREASE	FY91	PERCENTAGE INCREASE
DIRECT COSTS *****						
WATERWORKS DIVISION	\$19,795,792	18.6%	\$23,508,208	18.8%	\$28,478,047	21.1%
SEWERAGE DIVISION	36,795,920	16.9%	43,898,613	19.3%	53,277,492	21.4%
ALLOCATED DIVISIONS	31,985,401	63.5%	43,814,734	37.0%	57,496,590	31.2%
TOTAL DIRECT EXPENSES:	\$88,577,113	30.7%	\$111,221,554	25.6%	\$139,252,129	25.2%
INDIRECT COSTS *****						
INSURANCE	\$1,522,000	12.2%	\$1,750,300	15.0%	\$2,012,845	15.0%
WATERSHED & PILOT	3,385,000	36.7%	3,892,750	15.0%	4,476,663	15.0%
MITIGATION	3,523,000	N/A	6,600,000	87.3%	7,000,000	6.1%
DEBT SERVICE	45,360,000	36.2%	76,000,000	67.5%	131,575,000	73.1%
ADDITION TO RESERVES	3,911,000	103.6%	9,473,444	142.2%	10,496,809	10.8%
TOTAL INDIRECT EXPENSES:	\$57,701,000	47.7%	\$97,716,494	69.3%	\$155,561,317	59.2%
TOTAL CURRENT EXPENSES:	\$146,278,113	37.0%	\$208,938,048	42.8%	\$294,813,446	41.1%
REVENUE *****						
CONTRACT INCOME	\$2,200,000		\$2,750,000		\$3,450,000	
INVESTMENT INCOME	4,300,000		5,100,000		5,900,000	
OTHER INCOME	2,000,000		2,300,000		2,000,000	
RATE REVENUE	137,778,113		198,788,048		283,463,446	
REQUIRED RATE INCREASE:		37.5%		44.3%		42.6%

TOTAL CURRENT EXPENSES AND RATE REVENUE FY89 - FY91



Based upon the cash flow projections contained in the MWRA's FY88-FY90 Capital Improvement Program, debt service costs will increase by 67.5 percent in FY90 and 72.4 percent in FY91. The cost of mitigating the impacts of MWRA projects on adjacent communities will also increase substantially in FY90. Continued capital investment will also necessitate significant additions to reserve balances that are tied to the value of the Authority's capital stock. For FY90 and FY91 a total of approximately \$5 million is planned to be contributed each year. These additions to reserves will be partially offset by the additional investment income that will result from higher reserve fund balances.

The direct costs of the Authority's divisions are projected to grow less rapidly through FY91 than they have during the past several years. The most rapid area of increase in direct division costs will be in the personnel resources required to manage the Authority's capital program. For FY90 and FY91 the staffing level for Engineering and Construction Divisions is projected to increase by 25 percent each year. Additional resources in real terms will also be required to operate and maintain new facilities and to provide improved maintenance of the water and sewer systems. General inflation rates of six percent for materials and services, eight percent for energy and ten percent for chemicals have been included in the projections of direct division costs.

Summary of Priority Programs

Program Description

Management of
Capital
Program

The primary responsibility of this program is to ensure timely, cost-effective planning, design and construction of the MWRA's capital improvement projects. The Authority's capital investment program is entering a critical phase. Major projects in the multi-billion dollar harbor program are moving from planning to design and construction. The sewer extension projects in the southern system are scheduled to begin construction in FY89 and FY90. In addition, other investments in the facilities and infrastructure of both the water and sewage systems are increasing.

Increases in the Authority's project planning, engineering and construction management capacity will result in more cost-effective designs, improved project scheduling and lower construction costs. Additional resources for this priority program are being allocated to the Engineering and Construction Divisions and the Program Management Unit.

Summary of FY89 Performance Objectives

- o to provide sound management of all planned capital improvement projects, including these to improve Boston Harbor water quality.
- o to increase the number of in-house studies and designs.
- o to manage design and engineering work on 70 capital project phases.
- o to manage construction work on 81 capital project phases compared to 47 in FY88.
- o to increase the number of completed capital construction project phases in FY89 by 89% from FY88.
- o to reduce FY89 schedule and dollar variances through improved planning and management.

Program Description

Toxics Control and Reduction

In order to achieve the twin goals of a cleaner Harbor and an environmentally sound residuals management program, substantial resources must be devoted to an aggressive effort to minimize inflows of toxics and heavy metals into the MWRA sewerage system. An effective hazardous pollution control and toxics reduction program will reduce the costs of residuals management and minimize disruption of treatment plant processes.

The Toxics Reduction and Control Program is the responsibility of the Sewerage Division. Program functions include controlling hazardous wastes entering the collection system, NPDES compliance monitoring and permitting. Principal areas of increased activity planned for FY89 include septage and landfill monitoring and increased industrial inspection, monitoring and enforcement. Most of the budget increases for the program are in staffing requirements and professional laboratory services which are required for the activities outlined above.

Summary of FY89 Performance Objectives

- o increase the number of monitoring activities for septage sites, landfills and industries from 873 in FY88 to 2,500 in FY89.
- o increase the number of industrial and other permit-related inspections from 2,600 in FY88 to 2,800 in FY89.
- o increase the industrial and municipal compliance/permitting activities from 650 in FY88 to 1,550 in FY89.
- o begin to develop programs to reduce toxic inflows from households and from runoff in combined sewer areas.

Program Description

Infiltration and Inflow Reduction

The purpose of this program is to expand the inspection and repair of the MWRA's wastewater interceptors in order to reduce infiltration and inflow into the system. Investments in this program will reduce both capital and operating costs at the treatment plants and CSO facilities.

The program is the responsibility of the Sewerage Division's Wastewater Collection Department, with technical assistance and program coordination provided by the Engineering Division. The major task of the program is the inspection and repair of MWRA sewer lines. A preliminary assessment indicates that a survey of the entire system should be completed once every ten years. It is estimated that about ten percent of inspected line will require repairs or reconstruction.

Summary of FY89 Performance Objectives

- o to inspect 17 miles of interceptor lines to assess their structural integrity.
- o to plan and carry out repairs to deteriorated sewer lines.

Program Description

Water Conservation

For the last several years, the total volume of water supplied by the MWRA to its user communities has exceeded the safe-yield of the Authority's water supply. A strong conservation program is essential in order to avoid the necessity of developing major new water supplies. The Maintenance Engineering Department of the Waterworks Division has primary responsibility for the Authority's water conservation efforts. In addition, the Division's Metropolitan Department performs leak detection surveys and repairs of MWRA water distribution pipelines.

Additional resources have been approved for this program in order to expand the level of activity in the following areas: metering and monitoring; leak detection and repair; and residential institutional and industrial water conservation.

Summary of FY89 Performance Objectives

- o survey 5.200 miles of community pipelines for leakage, a 350% increase over FY88.
- o increase the number of miles of MWRA distribution system surveyed for leakage from 30 in FY87 to an estimated 265 in FY89.
- o repair 100% of found leaks.
- o complete at least 23 industrial water conservation audits of representative industries and develop technical manuals for industrial water conservation.
- o conduct leak detection training workshops for local public works employees.

Program Description

Responsibility for this program is located primarily in the Waterworks and Sewerage Divisions with coordination and policy direction provided by the Customer Services and Education program of the Executive Division. The goal of the program is to increase public awareness about water conservation, water pollution and sewage treatment through public education and information programs. In addition, the program seeks to ensure that solutions to public concerns are integrated into MWRA projects and programs.

Summary of FY89 Performance Objectives

- o prepare and distribute elementary and junior high school MWRA curriculum materials to all public schools in the MWRA service area.
- o develop MWRA curriculum for use in high schools.
- o conduct 30 teacher training workshops designed to encourage the use of MWRA curriculum in elementary and junior high schools.
- o increase the number of forums where MWRA policies and programs are presented.
- o develop audio-visual programs designed for presentations at workshops, conferences and seminars.

Financial
Planning and
Control

Program Description

The purpose of this program is to ensure that the Authority has sufficient resources to carry out its activities and that its limited resources will be used both efficiently and effectively. It provides for long range financial and resource planning and for consistent fiscal control. Additional resources have been budgeted for several programs of the Finance and Development Division in order to provide the Authority with the capacity for improved financial management.

Major responsibilities and activities in this area include program and financial planning, efficient procurement of goods and services, rates management, program performance review, and strengthening of fiscal control and production of financial and management reports.

Strengthening the Authority's financial management capacity is a cost-effective investment that will provide substantial savings through more stringent review of expenditure plans and lower financing costs for the Authority's capital program.

Summary of FY89 Performance Objectives

- o provide analytical support necessary to develop strategy for meeting MWRA's financial needs including strategy on "rate shock".
- o produce at least six monthly financial and budget reports within one month of the previous month's end.
- o obtain an audit opinion without qualifying statements.
- o decrease average purchase requisition processing time from 16 to 12 days.
- o begin to develop performance standards and multi-year performance objectives for all MWRA programs.
- o prepare 4 budget documents and 20 specialized reports.

Program Description

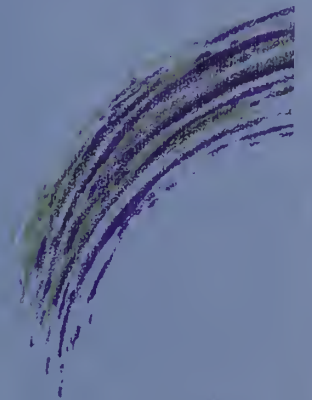
Preventive Maintenance

The goal of the MWRA's ongoing and preventive maintenance effort is to ensure the reliable and efficient operation of all system facilities. Maintenance efforts in the Waterworks Division are focused on basic infrastructure including pipelines which furnish water to MWRA communities as well as pumping station and hydro-generating facilities. The Waterwork's Division is also conducting leak detection and repair activities as part of the Authority's water conservation effort. The primary emphasis in the Sewerage Division will be on the pump stations, headworks and treatment plants. In addition, increased maintenance of the collection system will begin in FY89 as part of the inflow and infiltration reduction effort.

Summary of FY89 Performance Objectives

- o develop preventive maintenance schedules and work-order tracking systems for all MWRA facilities. Consultant work on this project will be directed by an inter-divisional task force.
- o reduce the number of days sewage pumping units are down for unscheduled maintenance from 1,049 in FY88 to 903 in FY89.
- o increase the number of major sewage pump overhauls from 12 in FY88 to 15 in FY89.
- o overhaul sludge handling and grit removal equipment at the treatment plants.
- o increase the number of miles of aqueduct pipelines inspected from 0 in FY87 to 25 in FY89.
- o increase the number of miles of aqueduct surface cleared from 10 miles planned in FY 88 to 30 miles in FY89.
- o increase the percentage of water system telemeters calibrated quarterly from 20 percent in FY87 to 100 percent in FY89.
- o increase the number of water pumping stations in the preventive maintenance program from 0 in FY87 to 10 in FY89.

Budget Overview



FY89 Current Expense Budget

Budget Overview

Budget Review and Adoption

The FY89 Current Expense Budget for the MWRA was transmitted to the MWRA Advisory Board for its review and comment. In accordance with statute, the Advisory conducted a public budget hearing on March 24, 1988 as part of its 60 day review process. The Authority's Board of Directors then held two days of budget deliberations during which time they had the benefit of the Advisory Board recommendations. This thorough review process which incorporated Advisory Board, and public comment helped reduce rates by \$8.8 million. The Final FY89 Current Expense Budget was formally adopted on June 22, 1988 by the MWRA Board of Directors.

FY89 Current Expense Budget

This budget sets forth \$146.3 million in total current expenses and an equal amount of total current revenue. The Authority is governed by laws of the Commonwealth of Massachusetts which require that it recover its annual costs, net of other revenue, from user charges. The Authority is committed to minimize costs and rates, consistent with its responsibilities. Information on MWRA rate-setting policies is contained in Appendix A.

Budget Summary

The FY89 budget for the Authority's eight divisions' is \$88.6 million. The direct expenses of each division are summarized in Table 3. In addition to the divisions direct operating and maintenance expenses, the FY89 Current Expense Budget includes a total of \$57.7 million for insurance, the MWRA share of payments in lieu of taxes for, and the cost of management of watershed lands; mitigation agreements with impacted communities; debt service and additions to reserves.

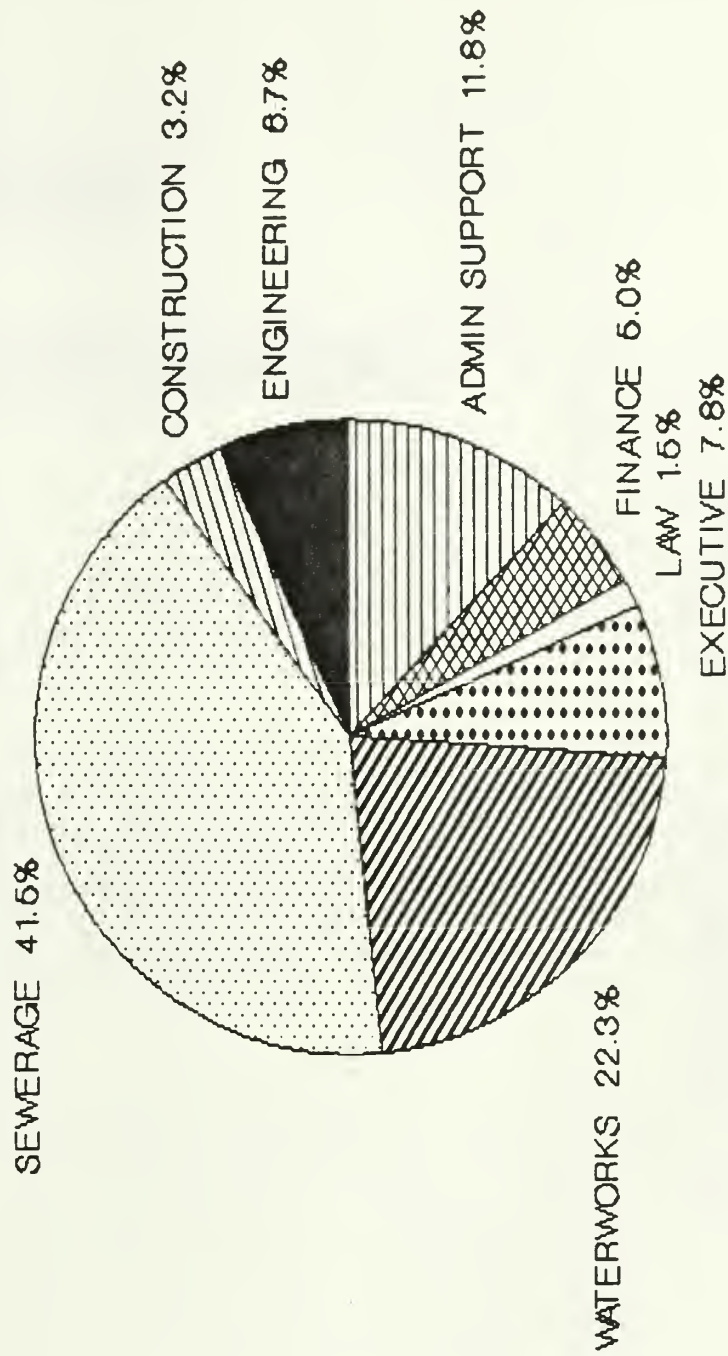
This overview section outlines the major assumptions and methods that were used in developing the budget for each current expense and current revenue category. The following section of the document summarizes the budget and objectives for each division and describes the activities, performance objectives and budgeted costs of the various programs in each division.

Table 3

MASSACHUSETTS WATER RESOURCES AUTHORITY
CURRENT EXPENSE BUDGET
FISCAL YEAR 1989

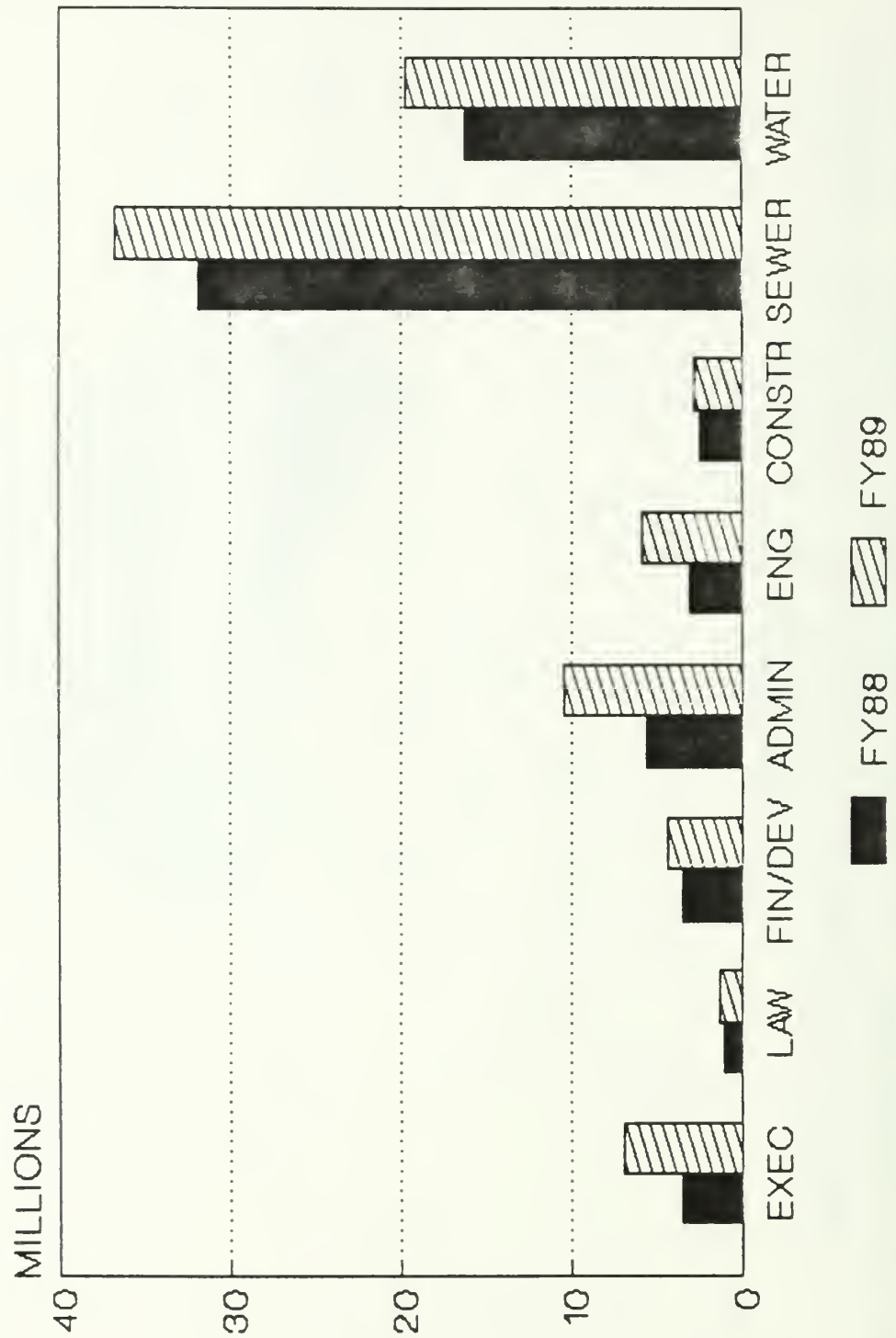
EXPENSE LINE ITEMS	EXECUTIVE	LAW	FINANCE & ADMINISTRATIVE			ENGINEERING	CONSTRUCTION	SEWERAGE	WATERWORKS	TOTAL	
			DEVELOPMENT	SUPPORT						AUTHORITY	
WAGES AND SALARIES	\$4,078,186	\$1,048,554	\$3,153,417	\$3,178,122	\$5,025,310	\$2,446,327	\$17,562,993	\$11,283,823	\$47,776,732		
OVERTIME	33,490	10,000	7,500	70,982	22,653	40,000	1,858,055	479,087	2,521,767		
FRINGE BENEFITS	228,235	68,864	255,971	284,221	292,774	209,122	1,997,231	1,238,230	4,574,648		
WORKERS' COMPENSATION	0	0	0	0	0	32,000	585,000	199,200	816,200		
TOTAL LABOR COSTS:	\$4,339,911	\$1,127,418	\$3,416,888	\$3,533,325	\$5,340,737	\$2,727,449	\$22,003,279	\$13,200,340	\$55,689,347		
CHEMICALS	\$0	\$0	\$0	\$2,400	\$0	\$0	\$2,769,259	\$2,172,843	\$4,944,502		
UTILITIES AND ENERGY	0	0	0	701,400	0	2,350	3,709,757	1,606,456	6,019,963		
ONGOING MAINTENANCE	0	0	0	719,740	0	1,000	2,221,596	750,180	3,692,516		
NEW MAINTENANCE	0	0	0	120,600	0	4,000	1,207,705	264,100	1,596,405		
EDUCATION, TRAINING & MEETINGS	216,171	10,500	59,000	260,090	88,200	14,675	62,062	76,600	787,298		
PROFESSIONAL SERVICES	1,662,340	170,000	573,500	100,000	365,000	2,000	2,564,600	703,940	6,141,380		
OTHER MATERIALS	40,327	21,820	18,450	560,010	88,933	88,533	699,921	517,609	2,035,603		
OTHER SERVICES	682,785	17,600	334,200	4,467,989	68,360	37,700	1,557,741	503,724	7,670,099		
TOTAL DIRECT EXPENSES:	\$6,941,534	\$1,347,338	\$4,402,038	\$10,465,554	\$5,951,230	\$2,877,707	\$36,795,920	\$19,795,792	\$88,577,113		

MASSACHUSETTS WATER RESOURCES AUTHORITY PROPORTION OF CURRENT EXPENSE BUDGET BY DIVISION IN FY89



Graph 5

MASSACHUSETTS WATER RESOURCES AUTHORITY PROPORTION OF CURRENT EXPENSE BUDGET BY DIVISION IN FY88 AND FY89



Rate Revenue

Nearly 95 percent of the Authority's revenue comes from rates which communities pay the Authority for water and sewer services. Rate revenue requirements are \$137.8 million in FY89. \$45.2 million is for the operation, maintenance and improvement of the waterworks system; \$92.5 million is for operation, maintenance and improvement of the sewerage system.

75 percent of FY89 expenses are directly attributable to either the waterworks or sewerage system. Costs that are not directly attributable to either system are allocated to each system on a fixed ratio basis. This ratio is determined by the proportion of direct operations and maintenance costs for each system. For FY89, the ratio is 63.5 percent sewer and 36.5 percent water. Cost of debt is allocated based on the purpose for which debt is issued. Non-rate revenue is allocated to the system responsible for generating the income, and reduces the amounts which must be raised through rates.

Contract Income

Contract income is derived from any contracts the Authority has or may enter into for provision of water or sewer services. The projected income in FY89 is \$2.2 million, an increase of 41 percent from the previous year's budget. Projected contract income is based on estimates of somewhat decreased water use by contract communities during FY89, but a higher average price for water.

Investment Income

The Authority earns income by investing certain operating and reserve fund balances. Estimated income during FY89 is \$4.3 million, \$1.3 million more than contained in the current years' budget and 21 percent more than realized investment income during FY87. This amount does not include interest earned on capital funds. Interest income from these capital fund balances affects the current expense budget only to the degree that such income reduces borrowing requirements for capital investment and thus reduces debt service costs.

The projected level of investment income is based on assumptions that the Authority will increase its billing frequency, that reserves will be funded as planned and that

interest rates will remain at approximately their current levels.

Other Income

Other Authority income includes all fines, fees and deposit forfeitures and other miscellaneous income. In FY87, the Authority received nearly \$900,000 in this income category, and projections for FY89 income are significantly higher than those contained in the current year's budget. Aggressive enforcement of sewer regulations and the expected receipt of \$500,000 to partially offset the cost of operating and maintaining the Clinton wastewater treatment plant account for the projected increase in other income.

Labor Costs

The Authority's labor costs include wages and salaries for permanent and temporary employees, overtime pay, fringe benefits and workers' compensation. In this budget these costs account for 38.1 percent of the Authority's total current expenses. Labor costs are also the largest single category of cost increase in the FY89 budget.

Wages and Salaries

Cost increases for wages and salaries are due to four factors: wage increases for existing personnel, inclusion of full year FY89 salaries for new personnel hired during FY88, new positions for FY89 and increased use of temporary employees. The estimated cost increase due to each factor is presented below.

Wage increases for existing personnel	2.9 million
Full year salaries for new FY88 positions	4.8
Approved new FY89 positions	4.6
Temporary employees	<u>\$ 0.1</u>
Total increase in Wages and Salaries	\$12.4 million

Wage increases for union personnel were budgeted in accordance with existing contracts. Although there are substantial differences in wage rate increases based on grade, step and bargaining unit, for most union personnel FY89 wage increases range from 10-14 percent. The FY89 budget also includes an average merit increase of 7 percent for non-union personnel and funding for salary

adjustments made as a result of position reclassification. or accretion of positions into a bargaining unit.

A total of 231 positions will be hired in FY89. Most of these positions are concentrated in the seven priority program categories listed in the Executive Summary. Each of the positions was reviewed in relation to the performance objectives and activities of the program it will support. Hiring plans for new positions were developed in accordance with the requirements of the programs and a realistic hiring rate for the Authority as a whole. Table 4 presents a summary of the MWRA's FY89 hiring plan by division.

Temporary employees include short-term clerical and secretarial help needed to fill in during vacations and illnesses or for special assignments. This expense category also includes the cost of interns and cooperative students. For FY89 the newly created training component of the Human Resource Management program will be coordinating the Authority's apprenticeship activities which can provide both low-cost assistance to the Authority, and train young people for potential future jobs. In addition to intern and coop positions, nearly \$100,000 has also been budgeted for a summer youth employment to provide increased outdoor maintenance at the MWRA's waterworks and sewerage facilities.

Overtime

An Overtime budget of \$2.5 million is budgeted for FY89, which is 16 percent higher than the FY88 budgeted amount and 2 percent greater than actual FY87 overtime expenditures. When adjusted for annual union wage increases of approximately 12 percent over the past two years, the FY89 budget provides for fewer overtime hours than actually used in FY87. Most Authority overtime is incurred by union personnel in the Waterworks and Sewerage Divisions. Collective bargaining agreements require man for man coverage for absences due to vacations or illness. Overtime is also required during emergency situations, for performance of critical operational or administrative tasks and for snow removal.

Fringe Benefits

The two major items budgeted under Fringe Benefits are health and dental insurance premiums. The Authority pays 90% of the cost of health insurance for all employees and 90% of the cost of dental insurance for non-union employees.

Table 4

MASSACHUSETTS WATER RESOURCES AUTHORITY
FY89 HIRING PLAN BY DIVISION

DIVISION	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
LAW	1	1	0	0	0	0	0	0	0	0	0	0	2
EXECUTIVE	8	4	6	1	2	0	0	0	0	0	0	0	21
SEWERAGE	3	1	3	9	7	5	4	3	3	3	2	1	44
WATERWORKS	4	5	8	4	2	1	11	1	6	0	0	0	42
FINANCE & DEVELOPMENT	5	6	7	2	4	2	5	1	0	0	0	0	32
ENGINEERING	9	15	7	3	1	0	3	0	0	1	0	0	39
CONSTRUCTION	1	3	1	2	1	0	3	2	2	0	0	0	15
ADMINISTRATIVE SUPPORT	8	8	1	4	1	2	3	2	3	3	1	0	36
TOTAL AUTHORITY	39	43	33	25	18	10	29	9	14	7	3	1	231

For employees covered by collective bargaining agreements, the MWRA also contributes five dollars per week to a Health and Welfare fund. In addition, for those employees that were hired after March 31, 1986 the Authority pays half of the federal tax for Medicare.

For FY89 the budget for Fringe Benefits includes a projected 12 percent rise in health and dental insurance rates. A full year of health and dental insurance is budgeted for 400 new positions that are anticipated to be filled by the end of FY88. For FY89, an additional 231 positions will be filled and an average of nine months of health and dental insurance has been budgeted for these new personnel.

Workers' Compensation

Expenses in this line item include estimated compensation payments of \$335,000, medical payments of \$196,200, and lump sum settlements of \$285,000 for a total of \$816,200. Based on historical data, costs have been budgeted only for the Construction, Sewerage and Waterworks Divisions. The projection was based on the most recent six months of actual data, coupled with estimates concerning the timing of potential settlements and/or payments.

Chemicals

Chemicals have been budgeted based on required usage by the Sewerage and Waterworks divisions. Estimates of chemical usage are based on past experience and incorporate new programs such as scum management and odor control into the projections. Recent contract awards are the basis for the FY89 prices.

Utilities and Energy

The prices which the MWRA must pay for utilities and energy in FY89 are highly dependant on fluctuations in the volatile world petroleum market. The price of fuel oil used in the FY89 budget is \$.69 per gallon which is 10 percent higher than the average price currently paid by the MWRA. The unit cost of electricity is estimated to increase by 5 percent over the current rates per kilowatt hour. The projections for both fuel oil and electricity prices incorporated the latest DRI economic forecasts.

Prices for other items in this category are based on current costs plus an inflation factor. Usage for all items was estimated by each division based on past history and incorporated any new programs, activities or facilities.

Education, Training and Meetings

A total FY89 budget of \$787,298 is approved for education, training and meetings, which is slightly less than \$500 per employee. This budget amount includes the cost of tuition reimbursement, training programs and conferences, computer training, public meetings hosted by the MWRA, site visits to wastewater treatment facilities and special meetings with potential institutional buyers of MWRA revenue bonds. The increase in this line item from the FY88 budget is primarily due to tuition reimbursement, computer training, and other training programs for the additional staff hired in FY88 and in FY89.

Maintenance

Budgeted maintenance costs of the Authority are approximately 22 percent higher in this budget than in the budget for FY88. This increase is due in part to more intensive maintenance in the Waterworks and Sewerage divisions, including initiatives for inflow and infiltration reduction, and leak detection and repair. In addition, the FY89 budget includes \$320,000 in additional maintenance funding due to the increase in headquarters office space and related equipment and for maintenance of the Fore River Staging Area.

Professional Services

The FY89 budget for Professional Services is \$6.14 million, an increase of 38 percent from FY88. The two major items of increase are for lab and testing services to support the Toxics Reduction and Control program and \$200,000 budgeted to develop preventive maintenance standards and programs for all MWRA facilities. Other professional service items include the cost of the Authority's financial advisor, development of technical manuals for industrial water conservation, and programming of PC-based information systems. All professional services contracts were reviewed in relation to the specific objectives and activities of the programs they will support.

Other Materials

The Other Materials line item covers all materials that are not specifically related to maintenance activities; it includes everything from office supplies to work clothes. For FY89 the Other Materials budget is \$2.04 million a 20 percent increase over FY88. Lab and testing supplies for both the Waterworks and Sewerage Divisions is the largest category of increase. Major items budgeted under Other Materials are described in more detail in the program budget descriptions.

Other Services

The Other Services line item includes all non-professional services required to support MWRA operations, from printing and duplicating to telephone bills and space rental costs. Each of these categories of support services will increase in FY89 as a result of providing office space and administrative services to new MWRA personnel. The other major item in the FY89 Other Services budget is the cost of hauling and disposing of grit and screenings that are a product of the wastewater treatment process. These disposal costs will be lower in FY89 as a result of more competitive bids received from vendors.

Insurance

The Authority's insurance budget includes premiums for property and casualty insurance, brokers fees and estimates of self-insured property and general liability damages. The breakdown of costs between these categories is shown below.

Property and casualty premiums	\$1,182,000
Broker and claims administration fees	135,000
Property and general liability damages	<u>205,000</u>
Total	\$1,522,000

The increases in insurance costs relative to the FY88 budget are due primarily to an increase in MWRA personnel and property. A larger workforce, new vehicle purchases and the acquisition of the Fore River Staging Area have all increased the cost of the MWRA's insurance premiums and fees, and increased the potential cost of uninsured damages.

Watershed Reimbursement

This line item includes mandated reimbursements to the Commonwealth of Massachusetts for half the costs of the Metropolitan District Commission's Watershed Management Division as well as the Authority's share of payments in lieu of taxes (PILOT) to certain towns in the Quabbin and Ware River watersheds. For FY89 these costs are budgeted at \$2,185,000 and \$1,200,000 respectively. The sharp increase in estimated PILOT costs is due to recent legislation that requires the use of market rather than historic value as the basis for computing PILOT payments for watershed land.

Mitigation

The Authority is committed to reasonable measures which will alleviate some of the negative effects of major construction projects on the areas directly impacted by Authority work. The purposes of such amelioration are to protect, restore and strengthen the natural environment where possible; to minimize disruption to the physical, social and economic fabric of communities; and to provide for more regional equity through compensation for unavoidable hardships imposed on one area as a result of projects which benefit the region.

From time to time, the Authority will enter into agreements with contractors and communities incorporating mitigation measures which carry out the purposes outlined above. \$3.5 million is included in the FY89 Current Expense Budget for mitigation purposes.

Debt Service

Expenses budgeted in the "Debt Service" line item fall into three categories. The first, Commonwealth Debt, is the annual principal and interest cost required to retire certain bonds issued by the Commonwealth of Massachusetts prior to January 1, 1985 for improvements to the MDC water and sewer systems. Upon its creation, the Authority became responsible for all of such Commonwealth sewer system debt and half of the MDC's waterworks debt. The principal amount outstanding at the end of FY88 is expected to be \$105 million. The FY89 principal and interest expense is \$13.7 million.

The second category of debt service, Pre-operating Liability, is budgeted to recover the costs of operating the

MDC waterworks and sewerage divisions in the fiscal year ended June 30, 1985. This amount was not recovered through MDC assessments prior to the Authority becoming operational, and the Authority has proposed to recover \$2 million each year through FY 1997.

The third debt service category is the current portion of costs incurred by the Authority in carrying out its capital improvement program. Since its inception, the Authority has issued short-term debt guaranteed by the Commonwealth of Massachusetts. \$295 million of such debt is expected to be outstanding at June 30, 1988; an additional \$300 million is expected to be issued during FY89. \$140 million of existing debt is payable on July 1, 1989 and \$130 million of this amount will be refinanced at the end of FY89. Assuming a 6.5 percent interest rate on future debt issues, the interest cost on MWRA-issued debt is expected to be \$20 million in FY89.

In addition to the interest expense or cost of financing MWRA-issued debt, this budget contains amounts sufficient for required coverage of debt service and \$9 million to pay the current portion of capital expenditures. This amount is determined in accordance with the amortization policy contained in Appendix A. A schedule of capital costs to be amortized is in Appendix B.

Debt service costs, by category, are given below. Waterworks system or sewerage system costs are in accordance with the purpose for which debt was issued or costs incurred.

	<u>Waterworks</u>	<u>Sewerage</u>	<u>Total</u>
Commonwealth Debt	\$ 5,080,579	\$ 8,589,851	\$13,670,430
Pre-op. Liability	86,294	1,954,026	2,040,320
CY86 Series A	940,680	2,996,820	3,937,500
CY86 Series B	449,740	3,044,010	3,493,750
CY88 Series B	1,312,500	6,562,500	7,875,000
CY89 Series A	1,158,381	3,716,619	4,875,000
MWRA Amortization and Coverage	<u>4,275,000</u>	<u>5,193,000</u>	<u>9,468,000</u>
Total	\$13,303,174	\$32,056,826	\$45,360,000

Additions to Reserves

During each of the three years since it became operational, the Authority has provided for the funding of reserves. In accordance with its enabling statute, reserves are established to cover costs for which the Authority is or may be liable, and such funds must be expended in accordance with various financing agreements. The Authority has established the following reserves:

- Repair, Renewal and Rehabilitation (RRR)
- Operating
- Insurance
- Pension
- Accrued Benefit
- Debt Service Reserve

At the end of FY88, amounts in these reserves is expected to total \$37 million.

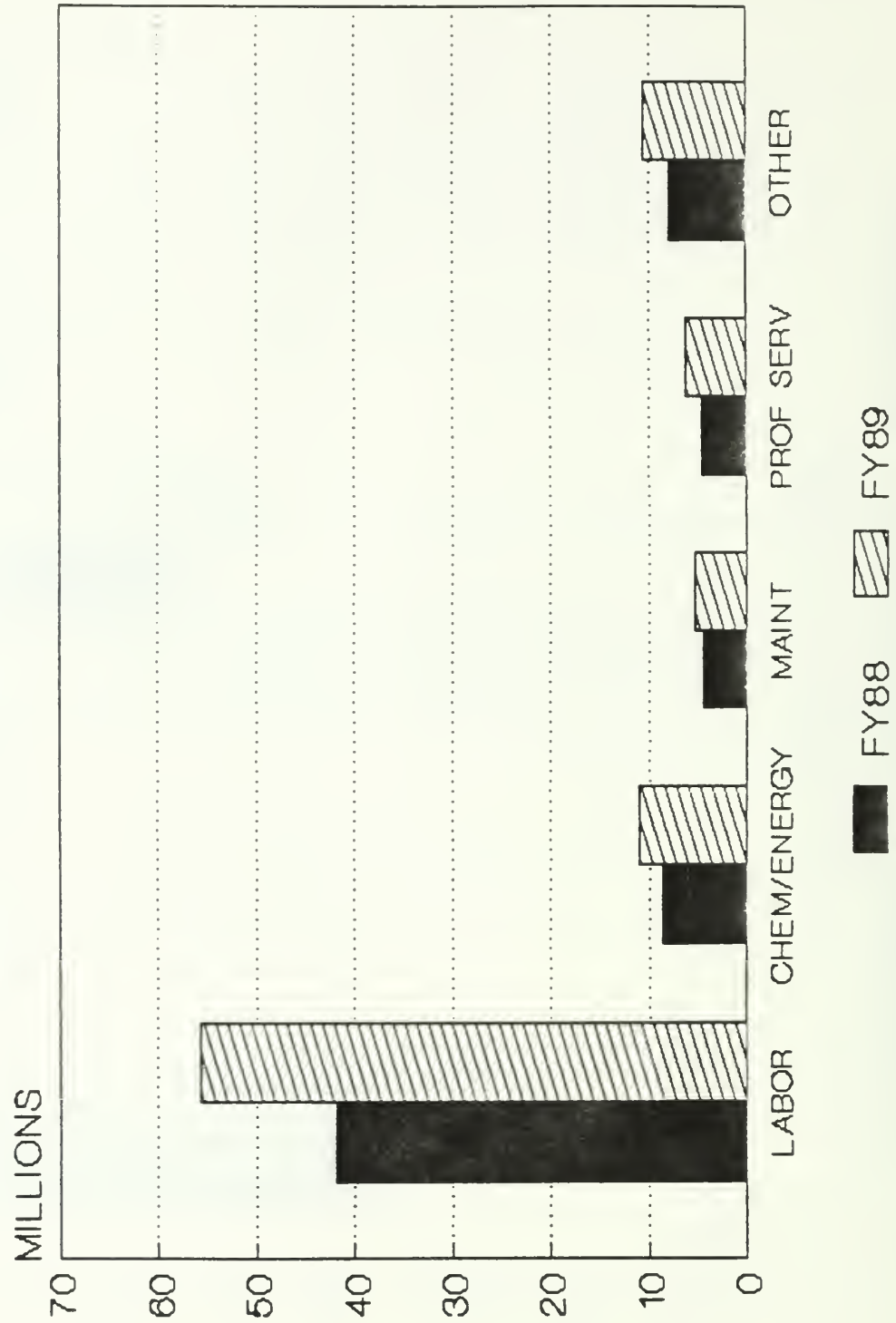
The FY89 Current Expense Budget contains \$4 million in additions to reserves to bring the Operating Reserve to an amount equal to 19% of budgeted division expenses. No other reserve additions are proposed for FY89.

CURRENT EXPENSE BUDGET

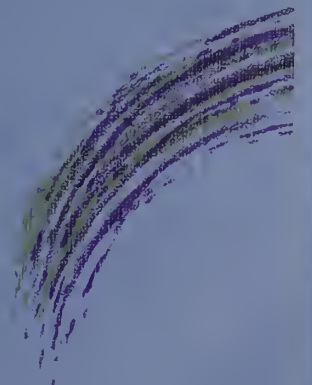
FY88 - FY89



MASSACHUSETTS WATER RESOURCES AUTHORITY SUMMARY OF DIRECT EXPENSES BY LINE ITEM CATEGORY

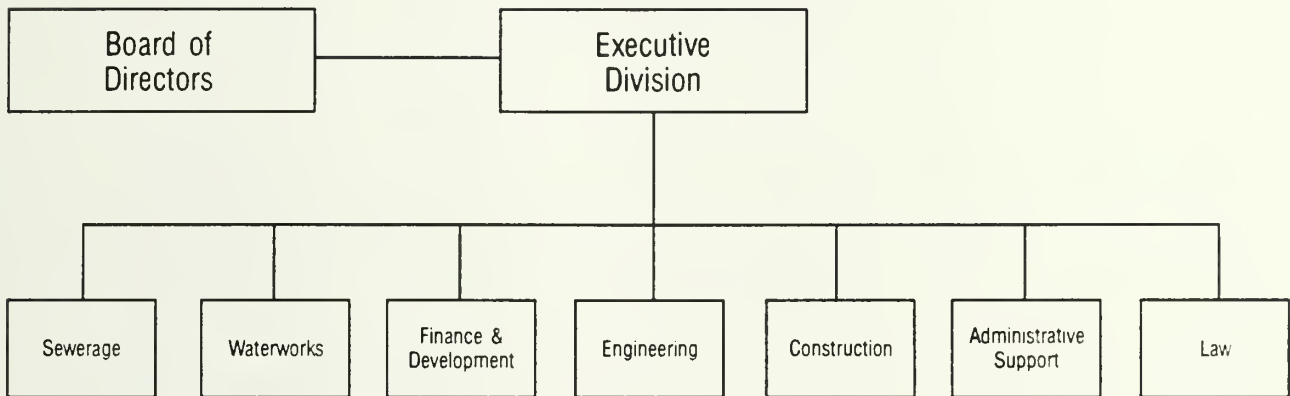


Division &
Program Budgets

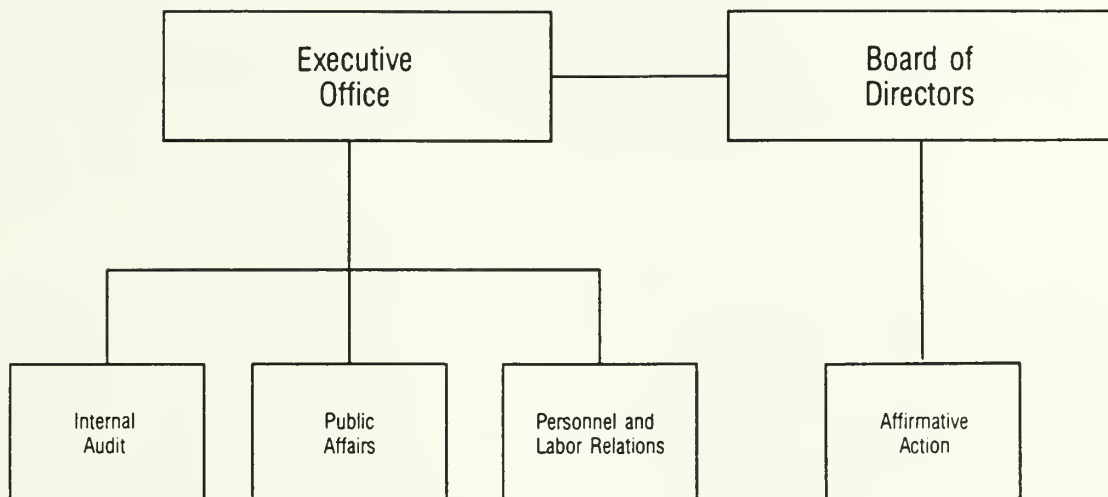




Massachusetts Water Resources Authority



Executive





EXECUTIVE DIVISION

Mission Statement

The Executive Division is responsible for formulating and implementing specific goals and programs that will achieve the Authority's primary mission of providing reliable and efficient water and sewer services, developing a long range water supply program and improving the water quality of Boston Harbor.

Programs and Organizational Units

The Executive Division is organized into four operational units. In addition, the Executive Division budget includes funding for the administrative costs of the Authority's Board of Directors as well as the MWRA Advisory Board. The Office of the Executive Director provides the central link between the Authority's Board and Advisory Board, the Units of the Executive Division and the MWRA's other seven divisions. This organizational structure is presented in the chart on the facing page.

The Board and Executive Director together with the Units of the Executive Division are responsible for the seven programs listed below.

- Executive Management and Policy Formulation
- Harbor Monitoring
- Internal Audit
- Customer Services and Education
- Media and Intergovernmental Relations
- Affirmative Action
- Human Resource Management

Table 5 presents a matrix that depicts the relationship between the organizational units and programs of the Executive Division.

Major Division Objectives

The FY89 objectives for Executive management are essentially a summary of the key objectives for the entire Authority. Primary among these are continued development of a construction management program for the Deer Island wastewater treatment facilities; reduction of hazardous pollutants entering the MWRA sewer system; and reduction of demand on MWRA water supplies through more effective water

conservation. Additional important objectives for the Executive Division are listed below.

- o initiate a harbor monitoring and research program.
- o improve public awareness of MWRA goals and objectives.
- o achieve the Authority's FY89 hiring plan.
- o implement and improve individual performance review system
- o achieve the MWRA's targets for procurement of goods and service from minority and women-owned businesses.

Division Budget Summary

A total budget of \$6.9 million was approved for the Executive Division, an increase of 96 percent from FY88. The creation of the Harbor Monitoring program as well as an increase in activities for the six other programs of the Executive Division has resulted in this significant increase in the FY89 budget. A summary of the Executive Division budget by program is presented in Table 6.

Wages and Salaries, Professional Services and Other Services account for 96 percent of the Executive Division's budget. A summary of the Division budget by line item is presented in Table 7. Major line items costs for the Division are outlined below. More detailed descriptions of the budgeted amounts of each line item are presented in the descriptions of the programs which they support.

Wages and Salaries

A total of 11 new positions were approved in the FY88 budget for the Public Affairs Unit, the Personnel Department and the Executive Director's office. For FY89 21 additional positions were approved. A summary of existing and new positions is given in Table 8.

Professional Services

Approximately 75 percent of the FY89 Professional Services budget of the Executive Division is for public education efforts, audit of construction contracts and for special services provided by the Human Resources Management program. The remainder is for harbor research, assistance to MBE/WBE

contractors and technical assistance services for the Executive Director.

Other Services

The largest item in the Other Services budget of the Executive Division is the cost of advertising for personnel recruitment. Also included in this line item is \$100,000 for the MWRA Advisory Board and approximately \$150,000 for printing of informational material regarding MWRA programs.

Table 5

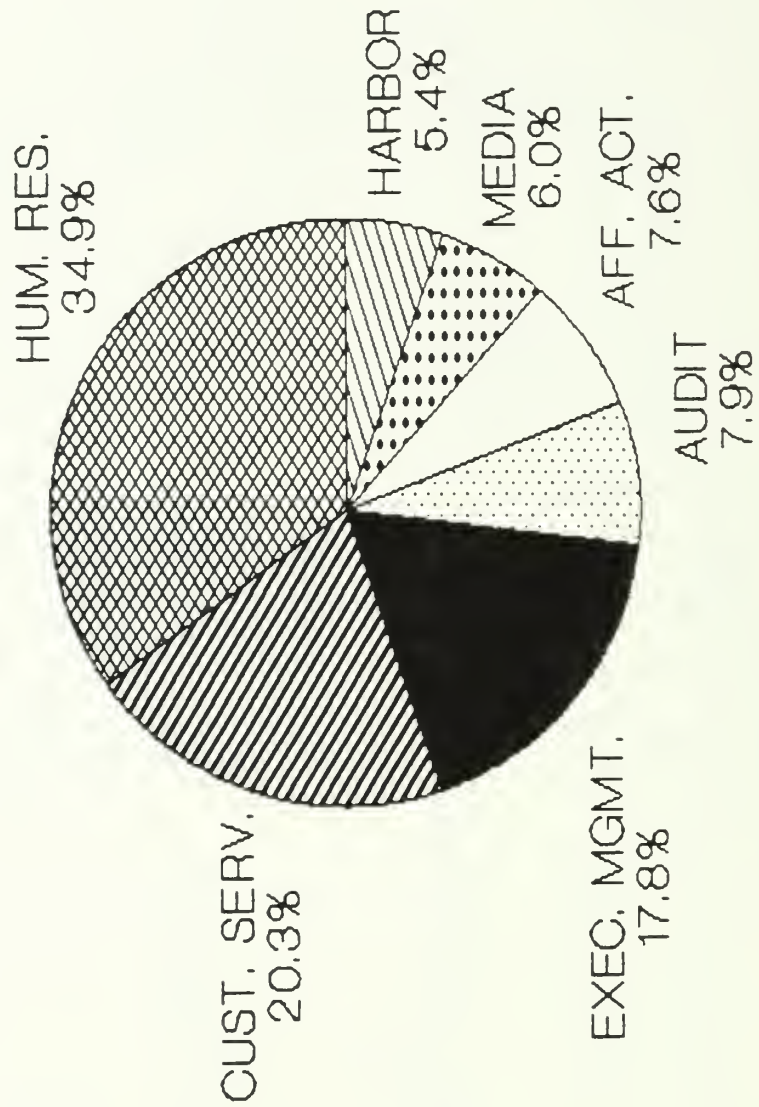
EXECUTIVE DIVISION
MATRIX OF PROGRAMS AND ORGANIZATIONAL UNITS

PROGRAM	BOARD OF DIRECTORS	OFFICE OF THE EXECUTIVE DIRECTOR	INTERNAL AUDIT	PUBLIC AFFAIRS	AFFIRMATIVE ACTION	PERSONNEL
POLICY FORMULATION & EXECUTIVE MGMT	X	X				
INTERNAL AUDIT			X			
AFFIRMATIVE ACTION					X	
HUMAN RESOURCE MANAGEMENT						X
HARBOR MONITORING		X				
MEDIA & INTERGOVERNMENTAL RELATIONS				X		
CUSTOMER SERVICE & EDUCATION				X		

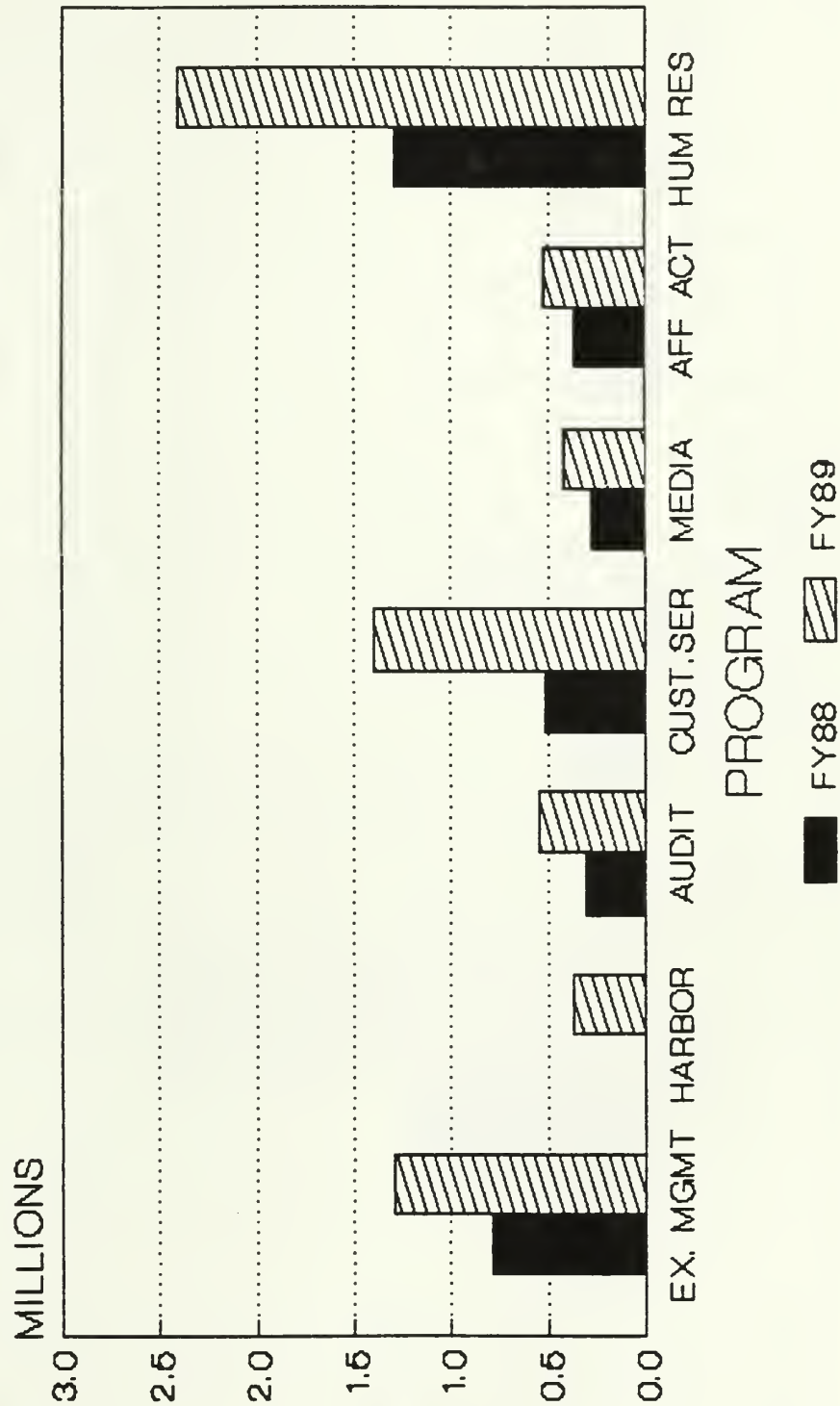
DIVISION: EXECUTIVE	DIVISION SUMMARY BY PROGRAM				
	1988 BUDGET	1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
PROGRAMS					
POLICY FORMULATION & EXECUTIVE MANAGEMENT	\$783,905	\$1,572,875	\$1,288,265	\$504,360	64.3%
HARBOR MONITORING & RESEARCH	\$0	\$168,385	\$374,165	\$374,165	N/A
INTERNAL AUDIT	\$305,955	\$542,187	\$543,875	\$237,920	77.8%
CUSTOMER SERVICE & EDUCATION	\$518,196	\$1,535,999	\$1,395,049	\$876,853	169.2%
MEDIA & INTERGOVERNMENTAL RELATIONS	\$277,323	\$494,314	\$415,994	\$138,671	50.0%
AFFIRMATIVE ACTION	\$363,752	\$533,565	\$521,154	\$157,402	43.3%
HUMAN RESOURCE MANAGEMENT	\$1,293,872	\$2,361,695	\$2,403,032	\$1,109,160	85.7%
DIVISION TOTAL:	\$3,543,003	\$7,209,019	\$6,941,534	\$3,398,531	95.9%

EXECUTIVE DIVISION

PROPORTION OF CURRENT EXPENSE BUDGET BY PROGRAM IN FY89



EXECUTIVE DIVISION PROGRAM BUDGET COMPARISON FY88 - FY89



DIVISION: EXECUTIVE	PROGRAM SUMMARY BY LINE ITEM			
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$2,025,218	\$1,039,902	\$4,078,186	\$2,052,968 101.4%
OVERTIME:	\$27,507	\$41,612	\$33,490	\$5,983 21.8%
FRINGE BENEFITS:	\$61,945	\$302,772	\$228,235	\$166,290 268.4%
WORKERS' COMPENSATION:	\$0	\$0	\$0	\$0 N/A
CHEMICALS:	\$0	\$0	\$0	\$0 N/A
UTILITIES AND ENERGY:	\$0	\$0	\$0	\$0 N/A
ONGOING MAINTENANCE:	\$0	\$0	\$0	\$0 N/A
NEW MAINTENANCE:	\$0	\$0	\$0	\$0 N/A
EDUCATION, TRAINING, & MEETINGS:	\$152,995	\$262,731	\$216,171	\$63,176 41.3%
PROFESSIONAL SERVICES:	\$793,700	\$1,688,340	\$1,662,340	\$868,640 109.4%
OTHER MATERIAL:	\$27,305	\$43,677	\$40,327	\$13,023 47.7%
OTHER SERVICES:	\$454,334	\$829,985	\$682,785	\$228,451 50.3%
PROGRAM TOTAL:	\$3,513,003	\$7,209,019	\$6,911,531	\$3,398,530 95.9%

EXECUTIVE DIVISION SUMMARY OF DIRECT EXPENSES FY88 - FY89 COMPARISON

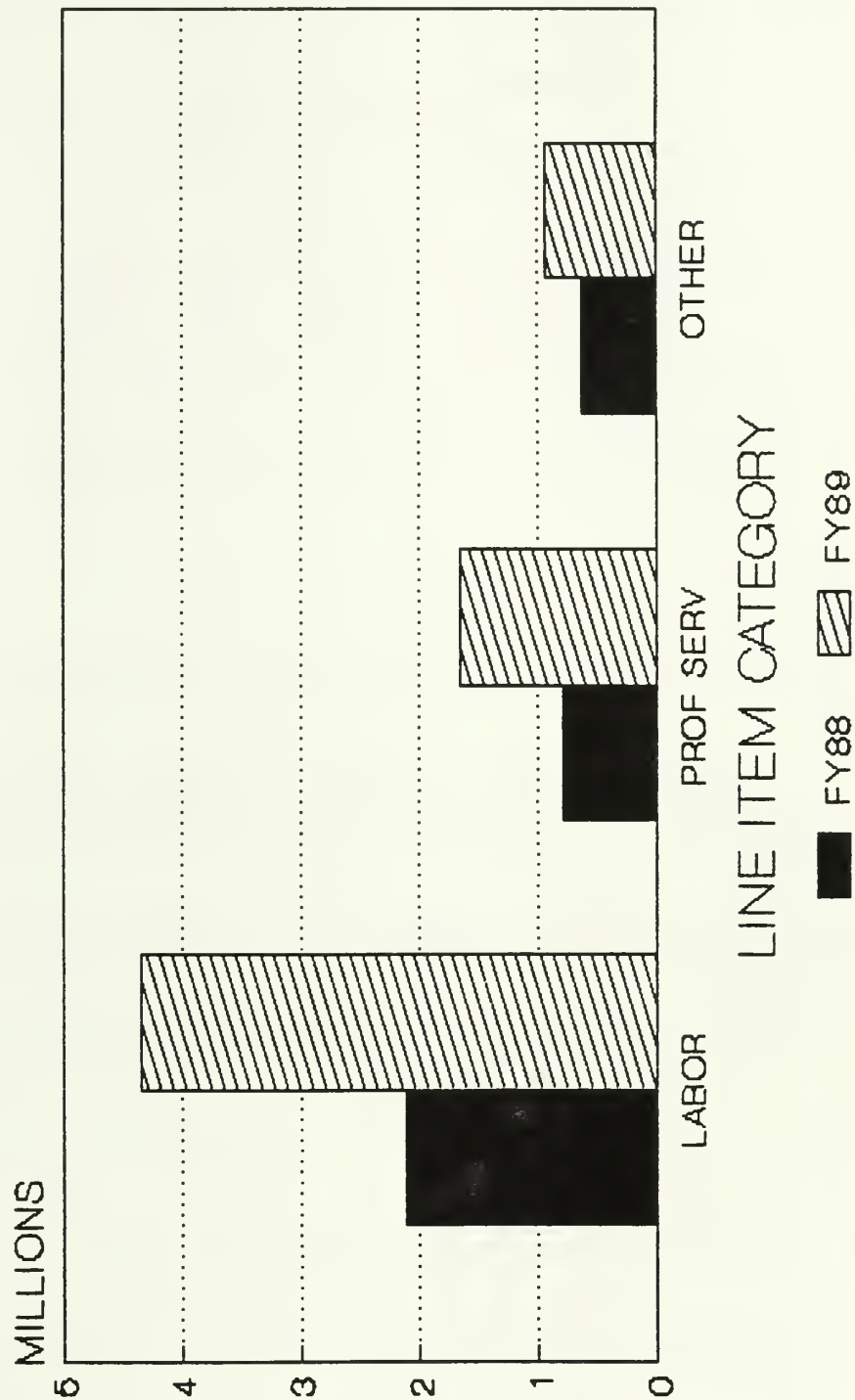


Table 8

MASSACHUSETTS WATER RESOURCES AUTHORITY
 FY89 CURRENT EXPENSE BUDGET
 PLANNED STAFFING LEVELS BY COST CENTER

EXECUTIVE DIVISION

DEPARTMENT/COST CENTER	POSITIONS IN FY88 BUDGET	POSITIONS TRANSFERRED IN FY88	POSITIONS TRANSFERRED TO FY89	POSITIONS ADDED IN FY88	PLANNED POSITIONS 6/30/88	POSITIONS TO BE FILLED IN FY89	PROPOSED ATTRITIONS	PLANNED POSITIONS 6/30/89
EXECUTIVE OFFICE	7	(1)	-	2	8	4	-	12
INTERNAL AUDIT	8	-	-	-	8	2	-	10
PUBLIC AFFAIRS	15	-	-	7	22	4	-	26
AFFIRMATIVE ACTION	8	1	-	-	9	3	-	12
BOARD OF DIRECTORS	1	1	-	-	2	0	-	2
HARBOR MONITORING	1	-	-	-	1	3	-	4
PERSONNEL								
PERSONNEL	19	1	-	-	20	3	-	23
LABOR RELATIONS	3	-	-	-	3	1	-	4
EDUCATION & TRAINING	0	-	-	2	2	1	-	3
	-----	-----	-----	-----	-----	-----	-----	-----
DIVISION TOTAL	62	2	0	11	75	21	0	96
	=====	=====	=====	=====	=====	=====	=====	=====

Program: Policy Formulation and Executive Management

Program Description

The Board of Directors and the Office of the Executive Director provide policy direction and executive management and decision-making for the MWRA. The Board of Directors is responsible for formulating policies to guide Authority actions and for major policy and fiscal decision-making. The Office of the Executive Director is responsible for effective management of all Authority programs and activities. This program formulates and implements the specific goals of the MWRA in carrying out its primary mission of providing reliable and effective water and sewer services to communities, developing a long-range water supply program and improving the water quality of Boston Harbor.

Program Goals

The goals for the Policy Formulation and Executive Management Program are a summation of the goals of all MWRA programs.

- o improve the water quality of Boston Harbor to allow the safe, sustainable harvest of all fish and shellfish species and to permit healthful swimming at all harbor beaches.
- o minimize water demands of user communities to avoid the need to develop major new sources of water supply.
- o maintain continuous, high-quality and efficient water and sewerage services to all user communities.
- o minimize rate increases.

Program Objectives

- o achieve substantial compliance with the Court-ordered schedule for the Boston Harbor cleanup.
- o meet the program milestones set forth in the Long-Range Water Supply Program.
- o further develop a comprehensive construction management system for the Harbor cleanup project.

- o establish management information systems to control and monitor financial, administrative, engineering operations and maintenance functions.
- o strengthen construction management procedures.
- o improve the public's awareness of the MWRA, its knowledge of the MWRA's mission and its confidence in the ability of the MWRA to carry out its mission.
- o provide a strategy for meeting the financial needs of the MWRA during the period ending 1995, including a strategy for managing rate increases and for increasing other fiscal resources.
- o meet the Affirmative Action, MBE and WBE goals of the MWRA.
- o achieve substantial compliance in meeting the priority objectives adopted by the Authority.

Program Budget

The amount budgeted for the Executive Management and Policy Direction program is \$1,288,265. A summary by line item is presented in Table 9.

Wages and Salaries

A total of four new positions have been budgeted for FY89 in the Office of the Executive Director. Those positions are listed below.

Financial Assistant
Executive Assistant
Secretary
Technical Assistant

These new positions will provide the Executive Director and Deputy Director with the administrative and technical resources necessary for management of the Authority. Specific duties will include budgeting and monitoring of expenditures for the Executive Division, review of staff summaries and special research assignments. The FY89 budgeted cost of the these new positions is \$140,700

Education, Training and Meetings

A number of professional seminars and conferences are budgeted for the Board of Directors and the Office of the Executive Director. These include trips to inspect facilities, investor tours, management and financial meetings and conferences for both executive staff and board members.

Professional Services

The \$215,000 budgeted for professional services in this program will provide the Executive Director and the Board of Directors with expert advice in areas such as legislation, organizational management and technical and environmental issues.

Technical Consulting Services	\$140,000
General Consulting Services	<u>75,000</u>
Total	\$215,000

Other Services

Almost all of this line item consists of the Authority's \$100,000 contribution to defray the administrative costs of the MWRA Advisory Board.

Table 9

DIVISION: EXECUTIVE	POLICY FORMULATION & EXECUTIVE MANAGEMENT				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$383,431	\$804,478	\$630,957	\$247,527	64.6%
OVERTIME:	\$13,447	\$17,862	\$11,460	(\$1,987)	-14.8%
FRINGE BENEFITS:	\$61,595	\$302,135	\$227,598	\$166,003	269.5%
WORKERS' COMPENSATION:	\$0	\$0	\$0	\$0	N/A
CHEMICALS:	\$0	\$0	\$0	\$0	N/A
UTILITIES AND ENERGY:	\$0	\$0	\$0	\$0	N/A
ONGOING MAINTENANCE:	\$0	\$0	\$0	\$0	N/A
NEW MAINTENANCE:	\$0	\$0	\$0	\$0	N/A
EDUCATION, TRAINING, & MEETINGS:	\$49,000	\$76,800	\$55,000	\$6,000	12.2%
PROFESSIONAL SERVICES:	\$130,100	\$215,000	\$215,000	\$84,900	65.3%
OTHER MATERIAL:	\$7,332	\$14,300	\$10,950	\$3,618	49.3%
OTHER SERVICES:	\$139,000	\$142,300	\$137,300	(\$1,700)	-1.2%
PROGRAM TOTAL:	\$783,905	\$1,572,875	\$1,288,265	\$504,360	64.3%

Program: Harbor Monitoring and Research

Program Description

This newly created program of the Executive Office will provide a broad spectrum of specialized technical assistance and research in support of the MWRA's efforts to improve the quality of Boston Harbor. These activities will include a variety of environmental, economic, geographic and scientific assessments as well as ongoing testing and monitoring activities. The MWRA plans to coordinate its harbor monitoring and research efforts with the activities of local universities, environmental organizations and non-profit groups.

Program Goals

- o to provide the Executive Director and other key MWRA personnel with the comprehensive, timely, and expert information necessary to make environmentally sound and socially responsible decisions to improve the water quality of Boston Harbor.

Performance Objectives

A director of the Harbor Monitoring program recently has been hired, and an additional professional position is budgeted for FY89. Two primary objectives have been outlined for this staff over the next year:

- o design and begin development of a comprehensive data base on harbor water quality.
- o establish joint research projects with other organizations concerned about the quality of Boston Harbor.

Program Budget

The total FY89 budget for this newly created program is \$374,165. Table 10 presents a summary of the program budget by line item. The majority of the expenditures are in Wages and Salaries and Professional Services.

Wages and Salaries

Three new staff members are budgeted for FY89 - a Harbor Studies Specialist and two Harbor Monitoring Associates. The Harbor Studies Specialist will assist in Harbor research and program development. This position will be a key element in implementing a variety of programs, including ongoing research projects with other organizations interested in the Harbor. The two Harbor Monitoring Associates will monitor beaches and the waters in the harbor for pathogens. The FY89 budgeted cost of these new positions is \$87,027.

Professional Services

A total of \$202,000 has been budgeted for Professional Services. The sum of \$180,000 has been transferred from the Sewerage Division for beach monitoring. An amount of \$12,000 has been budgeted for laboratory tests of Harbor water samples, based on 60 samples at \$200 per sample. In addition, \$10,000 will be used for short-term professional assistance and advice.

Table 10

DIVISION: EXECUTIVE	HARBOR MONITORING				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$0	\$128,807	\$161,807	\$161,807	N/A
OVERTIME:	\$0	\$1,720	\$0	\$0	N/A
FRINGE BENEFITS:	\$0	\$140	\$140	\$140	N/A
WORKERS' COMPENSATION:	\$0	\$0	\$0	\$0	N/A
CHEMICALS:	\$0	\$0	\$0	\$0	N/A
UTILITIES AND ENERGY:	\$0	\$0	\$0	\$0	N/A
ONGOING MAINTENANCE:	\$0	\$0	\$0	\$0	N/A
NEW MAINTENANCE:	\$0	\$0	\$0	\$0	N/A
EDUCATION, TRAINING, & MEETINGS:	\$0	\$11,500	\$6,000	\$6,000	N/A
PROFESSIONAL SERVICES:	\$0	\$22,000	\$202,000	\$202,000	N/A
OTHER MATERIAL:	\$0	\$2,718	\$2,718	\$2,718	N/A
OTHER SERVICES:	\$0	\$1,500	\$1,500	\$1,500	N/A
PROGRAM TOTAL:	\$0	\$168,385	\$374,165	\$374,165	N/A

Program: Internal Audit

Program Description

The Internal Audit Unit functions as an internal consultant for the MWRA by presenting independent, objective assessments and recommendations to top management. This unit monitors the efficiency and financial integrity of all MWRA operating and capital improvement programs. These audits and reviews focus on four major areas: operational audits, financial/compliance audits, contract/grants audits, and special reviews.

Operational Audits focus on the economy, efficiency and effectiveness of MWRA operations and programs. Financial Audits encompass financial operations; compliance with accounting and control systems; and organizational compliance with laws, regulations, and policies that materially affect the MWRA. Contract/Grants Audits include managing independent audits of MWRA capital projects to validate compliance with contract and grant conditions. Other reviews include consultation on the installation or revision of major management systems; coordination and review of MWRA policies and procedures; and the handling of special projects and investigations.

Program Goals

- o to provide meaningful and practical recommendations that will improve the efficiency of MWRA operations.
- o to provide top management with an independent assessment of the adequacy of the MWRA's management policies and procedures.
- o to limit the MWRA's exposure to fraud, waste and abuse.

Performance Objectives

During the past year, the Internal Audit Unit initiated a number of activities to assess and evaluate specific operations of the MWRA. Audits of certain financial, administrative and vehicle management programs were completed. A total of nine audits are expected to be completed during FY88. In addition, the number of new MWRA policies and procedures reviewed during FY88 is expected to total 15, compared to 10 in FY87.

The activity of the Internal Audit program will be intensified significantly during FY89 with the:

- o the review of 20 new MWRA policies and procedures.
- o an increase in the number of contract audits of capital projects, from one in FY88 to 10 in FY89.
- o the completion of three operational and six financial audits.

Program Budget

A total of \$543,875 is budgeted for the Internal Audit program. The major costs are in Wages and Salaries and Professional Services. Table 11 presents a summary of the program budget by line item.

Wages and Salaries

Two new positions have been budgeted for the Internal Audit Unit - an Assistant Director for Project Audits and an Associate Staff Auditor. These two positions will provide the capability to meet the objective of increasing the number of audits of MWRA construction contracts. The FY89 budgeted cost of these positions is \$78,112.

Professional Services

An amount of \$150,000 is for contract and grant audits.

Table 11

DIVISION: EXECUTIVE	INTERNAL AUDIT				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$286,800	\$368,947	\$373,735	\$86,935	30.3%
OVERTIME:	660	635	635	(25)	-3.8%
FRINGE BENEFITS:	0	0	0	0	N/A
WORKERS' COMPENSATION:	0	0	0	0	N/A
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	0	0	0	0	N/A
ONGOING MAINTENANCE:	0	0	0	0	N/A
NEW MAINTENANCE:	0	0	0	0	N/A
EDUC, TRAIN, & MEETINGS:	13,420	16,500	13,400	(20)	-0.1%
PROFESSIONAL SERVICES:	0	150,000	150,000	150,000	N/A
OTHER MATERIAL:	1,775	2,945	2,945	1,170	65.9%
OTHER SERVICES:	3,300	3,160	3,160	(140)	-4.2%
PROGRAM TOTAL:	\$305,955	\$542,187	\$543,875	\$237,920	77.8%

Program: Customer Services and Education

Program Description

The Customer Services and Education staff of the Public Affairs Unit maintains the crucial, two-way flow of communication between the MWRA and its customer communities and the general public. To achieve this goal, the staff's community relations professionals work with community groups and local officials in implementing a series of education and public participation activities, such as citizen advisory groups, task forces and public hearings. Educational efforts include the development of brochures, posters, school programs, exhibits, public-service announcements, subway advertising, slides and video presentations and special conferences.

A considerable portion of the staff's activity is dedicated to enlisting and integrating public input into the capital project planning and implementation process. In FY89, the Customer Services staff will also begin to assist MWRA user communities in developing fiscally sound retail rates that provide incentives for water conservation.

Another important component of this program is to coordinate the MWRA's public education and outreach programs to ensure consistency in the presentation of MWRA goals, projects and activities. The Waterworks, Sewerage and Engineering Divisions are primarily responsible for administering the MWRA's public education efforts on key issues such as water conservation, harbor water quality and residuals management. These efforts are coordinated by the Customer Services and Education staff.

Program Goals

- o to maintain a productive, ongoing dialogue between the MWRA and its customer communities, local and state officials, and the general public to:
 - ensure public input into the capital project planning and implementation process.
 - identify and respond to public concerns regarding MWRA programs and policies.
 - increase public support for critical MWRA goals such as water conservation and harbor clean-up.

Performance Objectives

During FY89, the Customer Services staff will continue to expand its public information, education and outreach effort. Specifically, the staff plans to:

- o develop a series of eight baseline public information pamphlets on major MWRA projects and programs, such as residuals management, CSO's and rates.
- o increase the number of forums where MWRA policies and programs are presented, such as those sponsored by Save the Harbor/Save the Bay, the New England Aquarium and the Massachusetts Audobon Society.
- o manage a pilot retail rates technical assistance program for user communities.
- o provide weekly briefings to the Executive Director on community concerns.
- o provide monthly summaries of public inquiries to Division Directors.
- o reduce the average maximum response time to public inquiries from 10 to 5 days.
- o develop and place on-line a community profile library database.
- o conduct meetings with local public officials and constituents on MWRA capital projects.
- o maintain a responsive public participation system for MWRA programs.

Program Budget

The budget for the Customer Services and Education Program is \$1,395,049. Table 12 presents a summary of the program budget by line item. The most significant costs are found in Wages and Salaries, Education, Training and Meetings, Professional Services, and Other Services.

Wages and Salaries

Listed on the following page are the four new positions for FY89 in the Customer Services and Education Program.

Public Inquiry Coordinator
Technical Assistance Manager
Community Relations Coordinator
Secretary

The Public Inquiry and Community Relations coordinators will enable the Authority to respond promptly to the concerns of its user communities and the general public. The Technical Assistance Manager will provide the staff support necessary to assist communities in developing fiscally sound, conservation oriented retail rates. The FY89 budgeted cost of these new positions is \$119,909.

Education, Training and Meetings

In addition to staff training and conferences this line item includes the cost of public meetings and MWRA sponsored conferences, workshops and field trips for educators, students and interested groups throughout the area. Special meetings to be held with the Advisory Board and public officials are also included here.

Professional Services

The budget for Professional Services includes a number of communications items. This is the largest portion of this program's budget, and is listed in detail below.

Advisory Board Water Supply Consulting	\$ 51,840
Market Research	65,000
Production of Audio Visual Materials	100,000
Graphics Design	50,000
Summaries of Board Meetings	21,000
Technical Assistance	<u>250,000</u>
Total	\$537,840

These services will enable the MWRA to research public opinion and target and coordinate the Authority's public education efforts to promote water conservation and a clean harbor.

Other Services

The costs of Other Services are for printing, duplicating, and distributing school curricula and handout materials, and for a series of informational pamphlets on all major MWRA

programs and projects. The breakdown for the Other Services line item is as follows:

Educational and Information Materials	\$150,000
Memberships	<u>1,000</u>
Total	\$151,000

Table 12

DIVISION: EXECUTIVE	CUSTOMER SERVICE AND EDUCATION				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$303,629	\$631,209	\$629,259	\$325,630	107.2%
OVERTIME:	\$2,502	\$3,500	\$3,500	\$998	39.9%
FRINGE BENEFITS:	\$0	\$0	\$0	\$0	N/A
WORKERS' COMPENSATION:	\$0	\$0	\$0	\$0	N/A
CHEMICALS:	\$0	\$0	\$0	\$0	N/A
UTILITIES AND ENERGY:	\$0	\$0	\$0	\$0	N/A
ONGOING MAINTENANCE:	\$0	\$0	\$0	\$0	N/A
NEW MAINTENANCE:	\$0	\$0	\$0	\$0	N/A
EDUCATION, TRAINING, & MEETINGS:	\$20,640	\$65,150	\$65,150	\$44,510	215.6%
PROFESSIONAL SERVICES:	\$140,000	\$656,840	\$537,840	\$397,840	284.2%
OTHER MATERIAL:	\$5,025	\$8,300	\$8,300	\$3,275	65.2%
OTHER SERVICES:	\$46,400	\$171,000	\$151,000	\$104,600	225.4%
PROGRAM TOTAL:	\$518,196	\$1,535,999	\$1,395,049	\$876,853	169.2%

Program: Media and Intergovernmental Relations

Program Description

This program of the Public Affairs Unit focuses on two special areas of MWRA's public affairs process, media and intergovernment relations.

The **Media Relations** office is responsible for communicating the policies, programs, goals and progress of the MWRA to the general public through the news media. The office works with all divisions of the MWRA to promptly and accurately respond to specific requests for information from a wide variety of news media representing newspapers, magazines, trade press, television and radio stations and wire services. The office also assists in directing public information efforts such as the development of appropriate brochures, public service announcements, films, videos and other materials.

The **Intergovernmental Relations** staff serves as the MWRA's liaison with all elected and appointed state and federal officials. By continually monitoring legislative activity and maintaining close communications with government officials, the staff articulates the MWRA's position regarding key legislation and regulatory decisions and ensures that concerns of officials are heard by the Authority.

Program Goals

- o through effective communications gain public support and understanding of the MWRA's efforts to clean-up Boston Harbor, to provide adequate and reliable water and sewer services, and to implement water conservation policies and other program priorities of the Authority.
- o to obtain the most favorable federal and state action on legislative matters affecting the MWRA and its user communities.

Performance Objectives

During the past two years, the Media Relations staff has nearly doubled the number of informational news releases and feature articles issued. At the same time, the staff reduced its response time to media inquiries by 200%. For FY89, the Media Relations office intends to:

- o properly communicate the achievement of all key milestones in the Boston Harbor Cleanup Schedule.
- o make bi-weekly media announcements regarding MWRA priorities, goals and programs.
- o increase the number of informational news releases issued by 33 percent.
- o coordinate visits by the Executive Director to media outlets.

During FY87 and FY88 the Intergovernmental Relations staff significantly stepped up its government liaison activities, increasing the number of meetings with key legislative officials from 20 to 60. The staff sought to regularly inform MWRA staff of opportunities to submit legislation as well as to comment on proposed legislation. During FY89, the staff is aiming to be more active and responsive in legislative affairs by:

- o holding 68 meetings with key legislative officials.
- o minimizing the time for distribution and comment of legislation affecting MWRA from 10 to 5 days.

Program Budget

The budget for this program totals \$415,994. No new positions are budgeted for FY89. Other major costs are found in Education, Training and Meetings, Professional Services, and Other Services. A summary of the program budget by line item is presented in Table 13.

Education, Training and Meetings

This line item contains the costs to the MWRA of holding various public meetings and conferences. Also included in this line item is \$3,000 for tuition reimbursement, \$4,500 for meetings with legislators and EPA officials in Washington and \$5,100 for other seminars.

Professional Services

The major costs for Professional Services are for designing the annual report, and for the services of a Washington legislative representative to work with our congressional delegation.

Other Services

The budgeted amounts for this line item are:

Printing/Duplicating	\$ 25,000
Memberships/Dues	5,000
Advertising	75,000
Newsclip Service/Video Monitoring	<u>8,400</u>
Total	\$113,400

Printing and Duplicating covers the cost of notices for meetings and the printing cost of the Authority's annual report. Also included is a legislative update done on a quarterly basis for the Board of Directors, Executive Director and Authority personnel. Advertising costs consist of production costs for a series of Public Service Announcements on water conservation and harbor quality issues.

Table 13

DIVISION: EXECUTIVE	MEDIA AND GOVERNMENT RELATIONS				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$170,792	\$256,602	\$265,482	\$94,690	55.4%
OVERTIME:	\$1,408	\$4,500	\$4,500	\$3,092	219.6%
FRINGE BENEFITS:	\$0	\$0	\$0	\$0	N/A
WORKERS' COMPENSATION:	\$0	\$0	\$0	\$0	N/A
CHEMICALS:	\$0	\$0	\$0	\$0	N/A
UTILITIES AND ENERGY:	\$0	\$0	\$0	\$0	N/A
ONGOING MAINTENANCE:	\$0	\$0	\$0	\$0	N/A
NEW MAINTENANCE:	\$0	\$0	\$0	\$0	N/A
EDUCATION, TRAINING, & MEETINGS:	\$11,610	\$12,600	\$12,600	\$990	8.5%
PROFESSIONAL SERVICES:	\$82,500	\$25,000	\$15,000	(\$67,500)	-81.8%
OTHER MATERIAL:	\$2,513	\$5,012	\$5,012	\$2,499	99.4%
OTHER SERVICES:	\$8,500	\$190,600	\$113,400	\$104,900	1234.1%
PROGRAM TOTAL:	\$277,323	\$494,314	\$415,994	\$138,671	50.0%

Program: Affirmative Action and Compliance

Program Description

The Affirmative Action and Compliance Unit develops and monitors the implementation of policies and programs for affirmative action in employment, purchasing and contracting. The Affirmative Action and Compliance Program ensures MWRA compliance with the appropriate laws and policies of the Commonwealth of Massachusetts and federal rules and regulations. The plan also incorporates a number of significant initiatives approved by the Board of Directors of the MWRA. These initiatives are designed to promote and provide business opportunities in the MWRA service area for minority and women-owned businesses.

The Minority Business Enterprises/Women Business Enterprises Procurement Plan directs the MWRA and each division to achieve procurement goals of 10% Minority Business Enterprise (MBE) and 5% Woman Business Enterprise (WBE). In addition, the plan covers work-force compliance for construction contractors on all MWRA construction projects. Over the next fiscal year, these activities will be gradually incorporated into the MWRA's Procurement program. The Affirmative Action Unit will be responsible for compliance monitoring and oversight. To achieve the goals of this plan, the staff undertakes a variety of outreach projects including participation in trade fairs targeted advertising promotions, organizational outreach and the development and dissemination of specialized information materials on minority and women business opportunities at the MWRA.

The personnel compliance and minority recruitment efforts of the MWRA's Affirmative Action program focus on implementing affirmative action and fair employment practices in all divisions and levels of the organization. The staff accomplishes these objectives by conducting recruitment and outreach activities targeted at group organizations; by holding training workshops for MWRA employees; and by coordinating an internship cooperative program for minority, female and special needs students. During FY89, The Personnel Department will be conducting more of these activities and the Affirmative Action and Compliance Unit will continue to provide assistance and retain responsibility for oversight and compliance monitoring.

Program Goals

- o to monitor compliance throughout the organization with the MWRA's affirmative action and equal employment policies.
- o to increase and actively promote awareness of business opportunities at the MWRA for minority and women-owned enterprises.

Performance Objectives

The MWRA Affirmative Action efforts during the past two years have already produced significant results. Further gains are targeted for FY89:

- o increase the number of minority employees at the MWRA to 22% of total workforce, compared to 14% in FY87.
- o increase the number of women employees at the MWRA to 22% of total workforce, compared to 17% in FY87.
- o increase the percent of contract dollars expended on MBE's from 6% in FY87 to 15% in FY89.
- o increase the percent of contract dollars expended on WBE's from 3.4% in FY87 to 5% in FY89.

Program Budget

For FY89, a total of \$521,154 is budgeted for the Affirmative Action unit. Approximately 98 percent of this amount is for Wages and Salaries, Education, Training and Meetings, Professional Services, and Other Services. The line item budget for this program is presented in Table 14.

Wages and Salaries

Three new positions have been approved in the FY89 budget for the Affirmative Action program, two Contract Compliance Monitors, and one Data Entry Clerk. These additional staff will provide improved monitoring of MWRA contractors and MBE/WBE procurement targets. The FY89 budgeted cost of these positions is \$55,881.

Education, Training and Meetings

A total of \$35,781 has been budgeted in this line item, which includes \$7,500 for tuition reimbursement and \$25,281 for attendance at local and national trade conferences and seminars.

Professional Services

The bulk of this line item is for a pilot program to provide technical assistance and outreach to MBE/WBE's seeking construction and consulting opportunities with the Authority. Also included is an amount for EEO/AA training seminars until the MWRA's in-housing training effort is underway (see Human Resources program).

Technical Assistance and Outreach	\$ 50,000
Training Seminars	<u>5,000</u>
Total	\$ 55,000

Other Services

The services budgeted in this line item are for printing and duplicating materials which relate to recruitment and contract compliance. It also includes an amount for advertisements in Minority and Women trade journals and Engineering publications to achieve the greatest possible MBE/WBE participation in contracting and procurement opportunities at the Authority.

Table 14

DIVISION: EXECUTIVE	AFFIRMATIVE ACTION				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$250,550	\$376,084	\$375,173	\$124,623	49.7%
OVERTIME:	3,083	5,000	5,000	1,917	62.2%
FRINGE BENEFITS:	0	0	0	0	N/A
WORKERS' COMPENSATION:	0	0	0	0	N/A
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	0	0	0	0	N/A
ONGOING MAINTENANCE:	0	0	0	0	N/A
NEW MAINTENANCE:	0	0	0	0	N/A
EDUCATION, TRAINING, & MEETINGS:	33,825	42,281	35,781	1,956	5.8%
PROFESSIONAL SERVICES:	15,000	55,000	55,000	40,000	266.7%
OTHER MATERIAL:	3,160	7,160	7,160	4,000	126.6%
OTHER SERVICES:	58,134	48,040	43,040	(15,094)	-26.0%
PROGRAM TOTAL:	\$363,752	\$533,565	\$521,154	\$157,402	43.3%

Program: Human Resource Management

Program Description

To effectively carry out its ambitious mission, the MWRA must continue to recruit and train a staff of well-qualified employees. The Human Resource Management Program of the Personnel Department concentrates on three distinct areas: Personnel Recruitment and Administration, Labor Relations, and Training and Education. The activities of these three functional areas are coordinated to ensure that all MWRA divisions are staffed with properly trained, productive and motivated employees who can effectively perform their assigned duties.

The **Personnel Recruitment and Administration** group coordinates all MWRA hiring including placing advertisements, screening applicants, scheduling interviews, and processing candidate selection decisions. In addition, this group develops and administers a competitive compensation and benefits program that will attract and retain qualified employees.

The **Labor Relations** Group works to foster a cooperative relationship between labor and management and to create a productive work environment. In the process, the staff addresses and resolves safety issues, administers workers' compensation and negotiates union contracts that are comparable with those of similar organizations.

The newly created **Training and Education** section seeks to improve and expand the professional and technical capabilities of all MWRA employees. The purposes of the the MWRA's training effort are to improve overall productivity and performance, generate in-house promotional opportunities, and develop and retain qualified, capable employees.

Program Goals

- o to ensure that all MWRA divisions are fully staffed by qualified, highly productive and motivated professional, technical and administrative employees.

Performance Objectives

During FY89, the Human Resource Management staff is aiming to:

- o recruit and hire approximately 220 employees for new positions and fill another 250 vacancies resulting from promotions and terminations.
- o minimize the average vacancy period due to position turnover from 2.5 to 2.0 months.
- o complete compensation and salary classification analyses and make appropriate recommendations that will keep the MWRA competitive in the market place as well as assure equity within the organization.
- o institute performance evaluation systems for all Authority employees.
- o train supervisory personnel in evaluation and disciplinary procedures.
- o complete negotiations on one union contract and begin negotiations on four others.
- o assess the training needs of all non-supervisory personnel and develop appropriate training programs.
- o institute an apprenticeship program for technical positions and expand cooperative education placements.

Program Budget

The total budget for the three components of the Human Resources Management program is \$2,403,032. A summary of the budget by each line item is presented in Table 15.

Wages and Salaries

Six new positions were approved in the FY88 budget for the Personnel Department. A total of five new positions are approved for FY89 and are listed below according to functional area.

Recruitment and Administration

Data Control Assistant
Receptionist
Safety Hygienist
Workers' Comp. Assistant

Training and Education

Program Manager - Training

These positions will ensure that the Authority is able to attract, recruit and train qualified personnel. The FY89 budgeted cost of these positions is \$115,504.

Education, Training and Meetings

A total of \$28,240 is budgeted for Education, Training and Meetings. This figure represents costs for a Career Expo, and an MWRA open house as well as conferences and tuition reimbursement for Personnel Department staff.

Professional Services

A number of Professional Services are required for the effective performance of this unit. Most of these programs are ongoing, although some consultants services are for short term periods. The Professional Services contracts budgeted for FY89 are listed below.

Legal Claims Administration	\$ 42,000
Minority Recruitment	70,000
Employee Relocation	50,000
Employee Handbook Update	10,000
Medical Screening Program	40,000
Employee Assistance Program	20,000
Employee Recognition	15,000
MIS Consultant	30,000
Benefits and Compensation Research	50,000
Unemployment Claims Consultant	2,500
Safety Consultants	25,000
Legal - Labor Relations Counsel	63,000
Fringe Benefits Study	20,000
Instructors	<u>50,000</u>

Total	\$487,500
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Under Legal Claims Administration includes the investigation and evaluation of job injury claims and representation for

the MWRA before the Industrial Accident Board. The Employee Assistance Program provides counseling to employees for emotional, financial, marital, legal or substance abuse problems. The Employee Recognition Program acknowledges outstanding performance, and makes offerings in the event of illness or death of employees or their family members. The MIS Consultant will design a personnel information system which will be used until the Human Resources component of the MIS plan is implemented.

Other Services

The major portion of this line item is advertising expenses for recruiting new personnel.

Table 15

DIVISION: EXECUTIVE	HUMAN RESOURCE MANAGEMENT				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$630,016	\$1,473,776	\$1,641,773	\$1,011,757	160.6%
OVERTIME:	6,406	8,395	8,395	1,989	31.0%
FRINGE BENEFITS:	350	497	497	147	42.0%
WORKERS' COMPENSATION:	0	0	0	0	N/A
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	0	0	0	0	N/A
ONGOING MAINTENANCE:	0	0	0	0	N/A
NEW MAINTENANCE:	0	0	0	0	N/A
EDUCATION, TRAINING, & MEETINGS:	24,500	37,900	28,240	3,740	15.3%
PROFESSIONAL SERVICES:	426,100	564,500	487,500	61,400	14.4%
OTHER MATERIAL:	7,500	3,242	3,242	(4,258)	-56.8%
OTHER SERVICES:	199,000	273,385	233,385	34,385	17.3%
PROGRAM TOTAL:	\$1,293,872	\$2,361,695	\$2,403,032	\$1,109,160	85.7%

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Law

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LAW DIVISION

Mission Statement

The Law Division provides legal analysis and counsel in order to inform the policy and management decisions of the Board and Executive Director. In addition, the Division provides legal assistance to the MWRA's operating, engineering, construction and administrative divisions; and represents the Authority in all court-related matters.

Programs and Organizational Units

The Law Division is organized into one program with four specialized functional areas. The specialized functions are Administration and Enforcement, Environmental, Contracts and Real Estate and Litigation. Together they comprise the Division's Legal Counsel program.

Division Budget Summary

The Law Division's FY89 budget is \$1.3 million, an increase of 20 percent relative to FY88. A summary of the budget for the Legal Counsel program is presented in Table 16.

On a line item basis, the Division's major expense categories are Labor Costs, Professional Services, Other Materials and Education, Training and Meetings. Each of these cost categories is described below in relation to the activities and performance objectives of the Legal Counsel program.

Program: Legal Counsel

Program Description

The Legal Counsel program of the Law Division provides legal analysis and counsel to the Authority in the creation and implementation of policies and programs. It assists and supplements the increasing activities of MWRA's operation, engineering, construction, and administrative divisions. This program focuses on four specialized areas: Administration and Enforcement; Environmental; Employment; Contracts and Real Estate; Litigation and the Boston Harbor case, a particular litigation matter, which because of its importance, is a separate category. During FY88, staff

members were assigned to work in coordination with major projects of the MWRA such as the construction of the secondary wastewater treatment plant, the development of the Fore River Staging Area, the combined sewer overflows and long term residuals management facilities planning efforts. It is anticipated that those activities will continue to absorb a substantial amount of staff time in FY89.

1. Administration:

Staff draft and review legislation and regulations, analyze all legislation affecting the MWRA, interpret the MWRA's Enabling Act, draft and review Board votes, review Board minutes and respond to public records requests and review conflict of interest questions.

2. Enforcement:

Staff enforce regulations, in particular MWRA's sewer use regulations; review industrial and municipal discharge permits, and advise the MWRA's Toxics Control and Reduction Program.

3. Environmental:

The staff provides legal counsel on all MWRA environmental programs, projects and policies, particularly in relation to court-mandated schedules and requirements for the clean-up of Boston Harbor. The staff conducts extensive legal research and analysis and offers counsel on current and proposed federal and state environmental regulatory programs. With regard to water supply, staff assist in the development of policy and drafting of regulations. In addition, the staff interacts and negotiates with other MWRA personnel and external regulatory agencies on environmental impact reviews and permitting of MWRA capital projects.

4. Employment:

Staff assist in the development of personnel services, advise management on employment issues and review labor agreements.

5. Contracts and Real Estate:

The staff works with other MWRA departments to assure the legality of all MWRA contracts, property acquisitions and dispositions. As part of the contract monitoring process, staff reviews contracts for legal sufficiency; identifies and investigates problems, claims, disputes, breaches or other potential

derogation of MWRA's rights of interest in contracts; and advises MWRA on legal matters relating to procurement.

6. Litigation:

The staff prosecute and defend court actions relating to the MWRA's properties and affairs. MWRA attorneys serve as in-house counsel to the MWRA in contracts, personal injury, employment and other general litigation cases. Staff assist the Attorney General in the representation of the MWRA in any action involving water pollution. The staff also serve as hearing officers in administrative proceedings initiated by MWRA for the enforcement of the MWRA's sewer use regulations. In addition, the staff reviews current and proposed MRWA programs to insure that their implementation does not conflict with current or past litigation positions of the MWRA.

7. Boston Harbor Case:

Staff manage the Boston Harbor case and coordinate with outside counsel. Staff collect information and prepare the monthly compliance reports for the court. Staff coordinate federal court requirements and MWRA planning efforts.

Program Goals:

- o to assist in the development and implementation of legislation and regulations which support the accomplishment of the MWRA's mission.
- o to ensure that all MWRA projects and programs comply with the law, including Court-mandated requirements and schedules for the clean-up of Boston Harbor.
- o to assist in the development and implementation of programs which strengthen the MWRA's regulatory functions.
- o to effectively represent the MWRA in all litigation and in administrative proceedings.
- o to provide effective contract review and expedite property acquisitions and dispositions, allowing MWRA projects to be constructed and placed into service with minimal legal obstructions.

Performance Objectives

To provide the MWRA with timely, in-depth information on legal issues, the staff have been responding to considerably more requests for opinions from other MWRA divisions, and expect that number to increase further in FY89. However, the particular types of requests will vary from year to year, depending on internal program activities and external forces.

- o To respond to 100% of all in-house requests for legal counsel and advice on any of the following issues:
 - Environmental laws, statutes, and regulations
 - Real estate acquisitions and dispositions
 - Employment matters
 - Contract reviews, change orders and contract disputes
 - Interpretation of the MWRA's Enabling Act
 - Representation in court and at Administrative hearings

In addition, the Legal Counsel Program has the following specific task objectives;

- o Prepare and submit the monthly compliance report to the Federal Court by the 15th of each month.
- o Handle 100% of the sewer use regulation enforcement cases referred from TRAC. The FY89 expected case load is 25 major violators and 225 minor violations.
- o Provide legal representation as in-house counsel at all administrative hearings arising as a result of formal actions against violators of sewer use regulations.
- o Serve as hearing officers in all adjudicatory hearings resulting from sewer use enforcement.
- o Issuing water use terms and conditions for the first time to 14 special user communities.
- o Provide legal representation as in-house counsel for the Authority in 22 cases in various stages of litigation.
- o Research and draft responses to pleadings, motions and court orders as necessary.

- o Negotiate and draft leases for Authority office space.
- o Develop standard procedures for acquisition and disposition of real estate.
- o Develop a Code of Conduct for MWRA employees and provide advice to staff on its implementation and application.
- o Implement an Authority-wide reporting system for all Boston Harbor related projects.
- o Review Authority documents for their litigation impact.
- o Coordinate the review, investigation and negotiation of claims with the Risk Management Unit.
- o Review staff summaries and Board votes and minutes.

Program Budget

A total of \$1,347,338 is budgeted for the Legal Counsel program, which includes the entire Law Division budget. A summary of the budget by line item is presented in Table 16.

Wages and Salaries

During FY88, the MWRA Board of Directors approved an additional five positions for the Law Division. This budget includes funding for two additional positions in FY89, increasing the staffing level to 27. The new FY89 positions are listed below.

Associate General Counsel
Secretary II

The cost of these FY89 positions is \$69,491.

The Associate General Counsel will provide the Law Division with improved management of its expanding program activities, particularly in the environmental area.

Professional Services

The Professional Services budget for the Legal Counsel program includes \$140,000 for outside legal services and \$30,000 for expert witnesses. The addition of three staff counsels in FY88 and one counsel in FY89 decreases the demand for outside legal services.

Education, Training and Meetings

The Division's budget for Education, Training and Meetings includes \$4,500 for tuition reimbursement and \$6,000 for training programs, conferences and meetings.

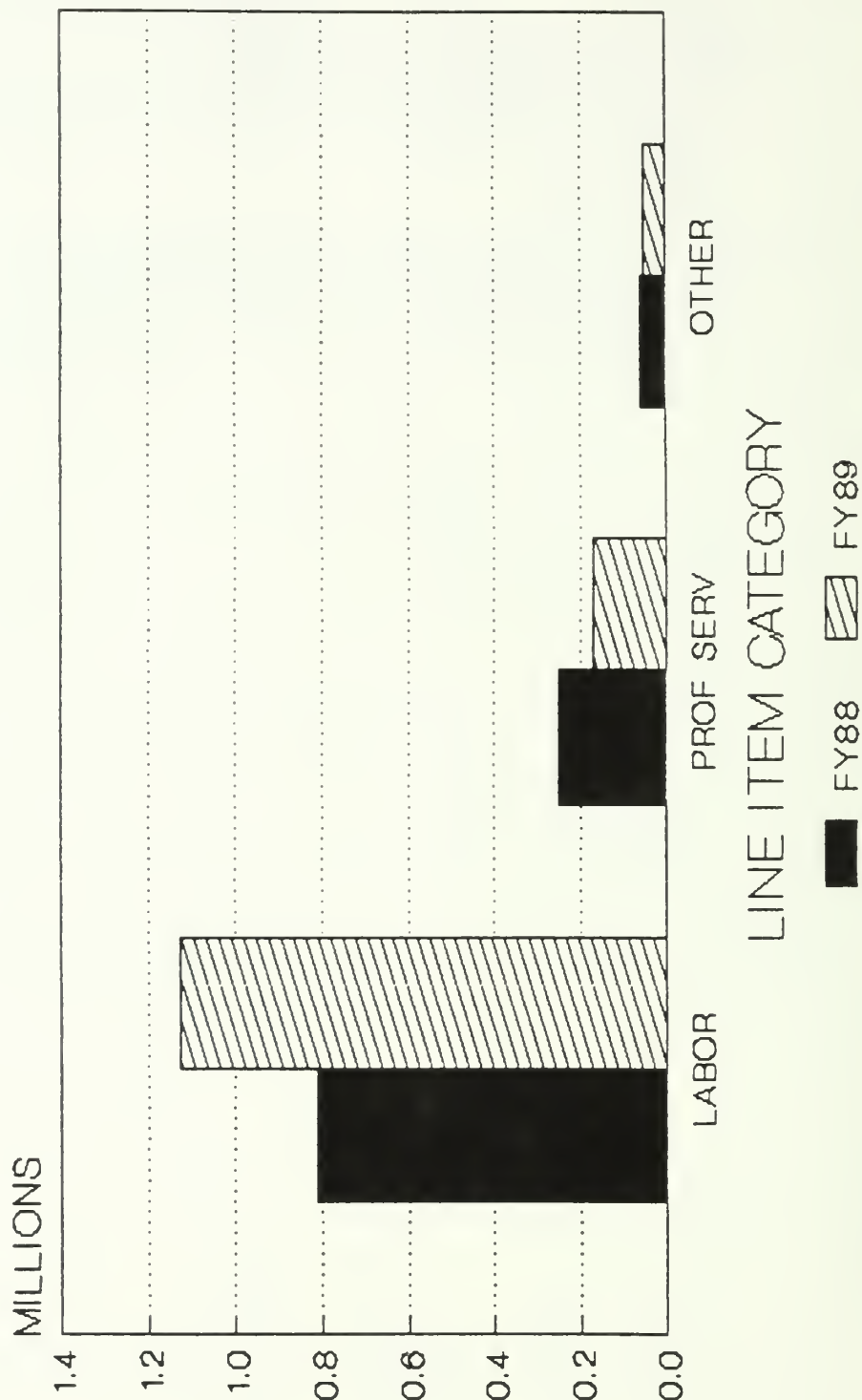
Other Materials

The major item budgeted under the Other Material category is reference materials for the law library at a total cost of \$14,200. Also included in this line item is \$6,380 for mileage reimbursement and \$1,240 for office supplies and equipment.

Table 16

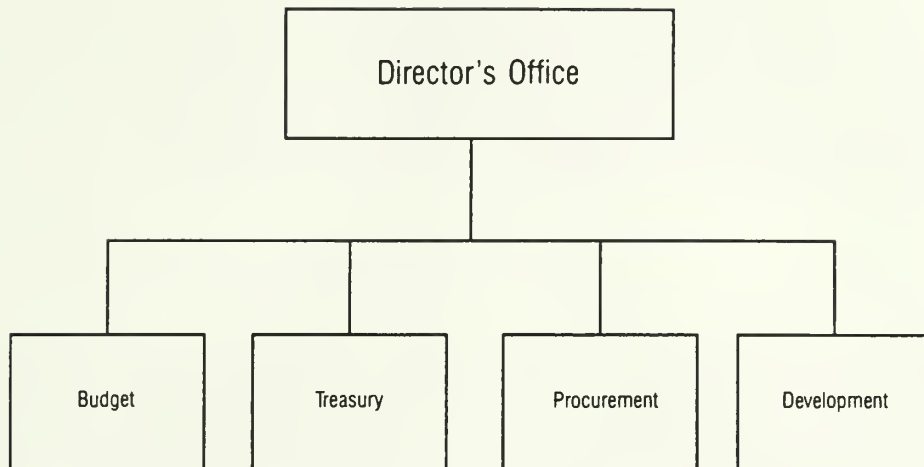
DIVISION: LAW	LEGAL COUNSEL				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$775,064	\$1,128,678	\$1,048,554	\$273,490	35.3%
OVERTIME:	7,800	10,000	10,000	2,200	28.2%
FRINGE BENEFITS:	28,335	77,229	68,864	40,530	143.0%
WORKERS' COMPENSATION:	0	0	0	0	N/A
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	0	0	0	0	N/A
ONGOING MAINTENANCE:	0	0	0	0	N/A
NEW MAINTENANCE:	0	0	0	0	N/A
EDUC, TRAIN & MEETINGS:	13,575	15,000	10,500	(3,075)	-22.7%
PROFESSIONAL SERVICES:	250,000	200,000	170,000	(80,000)	-32.0%
OTHER MATERIAL:	29,500	27,820	21,820	(7,680)	-26.0%
OTHER SERVICES:	16,850	23,000	17,600	750	4.5%
PROGRAM TOTAL:	\$1,121,124	\$1,481,727	\$1,347,338	\$226,214	20.2%

LAW DIVISION SUMMARY OF DIRECT EXPENSES FY88 - FY89 COMPARISON



Finance & Development







FINANCE AND DEVELOPMENT DIVISION

Mission Statement

The mission of the Finance and Development Division is to ensure the fiscal strength of the MWRA through the judicious, informed and farsighted allocation of resources. The Division provides the MWRA with centralized financial planning and management as well as procurement services for the economical acquisition of materials, services and real property.

Programs and Organizational Units

The Finance and Development Division is organized into four departments as shown in the chart on the facing page. Two of the departments are further divided into seven cost centers. The Division Director's Office provides direction and coordinated management for the entire division, while each of the departments has primary responsibility for one of the division's four programs. These programs are listed below.

- Budgeting and Financial Planning
- Treasury and Accounting Services
- Procurement
- Real Property Acquisitions and Development

Table 17 presents a matrix that outlines the functional relationship between the division's organizational units and programs.

Major Division Objectives

The MWRA must enter the capital markets on its own credit by June, 1990. At that time one of the major factors that will affect the Authority's cost of borrowing will be the financial community's assessment of how well the MWRA meets the standards for public financial management as articulated by credit rating agencies and institutional investors. A favorable assessment by the financial community will translate into millions of dollars in interest cost savings for MWRA ratepayers. In order to obtain these benefits the MWRA must begin now to ensure that adequate systems for financial planning, management and control are in place by 1990.

Over the next two years the MWRA's level of annual capital spending will more than double, and by the mid 1990's it will more than double again. In addition to an expanding capital program, the MWRA will also require resources for several other priority programs such as toxics reduction and control, inflow and infiltration reduction, water conservation and improved system maintenance. Strong financial planning and control will be essential if the MWRA is to economically achieve its goals in each of these priority program categories.

This Current Expense Budget provides resources to increase the capacity and performance of each of the Finance and Development Division's four programs. The overall objectives of these programs in FY89 are as follows:

- o Provide a strategy for meeting the financial needs of MWRA through 1995, including a strategy for managing rates.
- o Complete reorganization of the Division and the establishment of the Development Department - hire and integrate new staff and absorb expanded volume and/or responsibilities.
- o Provide resources and input required to develop and implement the Financial, Procurement and Human Resources Management Information System.
- o Meet affirmative action and M/WBE procurement goals.

Division Budget Summary

The \$4.4 million FY89 current expense budget for the Finance and Development Division is an increase of 23 percent from the FY88 budget. A summary of the budget for each of the Division's programs is presented in Table 18. Budget increases range from 7 percent for the Treasury and Accounting Services program to 28 percent for procurement in addition to the newly created Site Acquisition and Development program. Table 19 summarizes the Division budget by line item.

The costs of the Division Director's Office have been allocated to the program budgets based upon the proportion of each program's direct costs to the total direct costs of all four programs. These allocated costs are listed in detail in Table 20.

On a line item basis, the division's major expense categories are labor costs, Education Training and Meetings, Professional Services and Other Services. Each of these

cost categories is summarized below. More detailed discussions of each line item, including new positions, are contained in the program budget descriptions.

The recent reorganization of the Finance and Development Division included 20 new FY88 positions which brings the approved staffing level for the division to 74. An additional 23 positions have been approved for FY89. Existing and new positions for the division are summarized by cost center in Table 21. Wage rate increases and fringe benefit costs for existing personnel have been budgeted as described in the Budget Overview section of this document.

The Division's budget for Education, Training and Meetings includes \$12,000 for tuition reimbursement and \$6,000 for trips to brief institutional investors about the Authority's revenue bonds. The balance of this line item is budgeted for conferences and local meetings.

Professional Services contracts for the division include an investment advisor, auditing services and appraisal and legal services related to site acquisition.

Under the category of Other Services, the major budget items are data processing for payroll and financial reports and advertisement of bids by the Procurement program.

Table 17

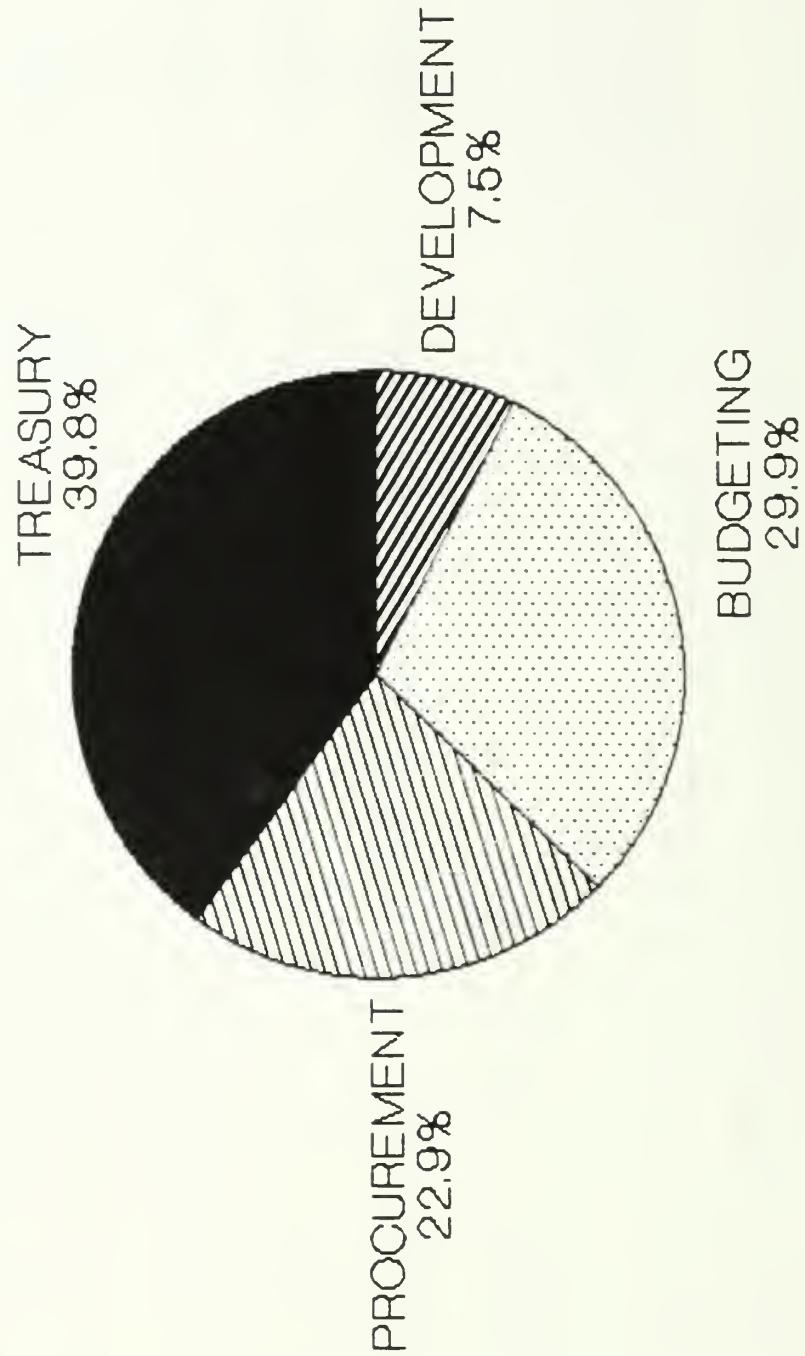
FINANCE & DEVELOPMENT DIVISION
MATRIX OF PROGRAMS AND ORGANIZATIONAL UNITS

PROGRAM	DIRECTOR'S OFFICE	BUDGET	TREASURY	PROCUREMENT	DEVELOPMENT
BUDGETING & FINANCIAL PLANNING	x	x			
TREASURY & ACCOUNTING SERVICES	x		x		
PROCUREMENT	x			x	
REAL PROPERTY ACQUISITION AND DEVELOPMENT	x				x

Table 18

DIVISION: FINANCE & DEVELOPMENT	DIVISION SUMMARY BY PROGRAM				
	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT	%
PROGRAM					
BUDGETING & FINANCIAL PLANNING	\$1,160,949	\$1,699,452	\$1,314,555	\$153,606	13.2%
TREASURY & ACCOUNTING SERVICES	1,632,588	1,906,316	1,751,831	\$119,243	7.3%
PROCUREMENT	785,028	1,132,756	1,006,006	\$220,978	28.1%
REAL PROPERTY ACQUIS. & DEV'T	0	395,926	329,646	\$329,646	N/A
TOTAL	\$3,578,565	\$5,134,449	\$4,402,038	\$823,473	23.0%

FINANCE & DEVELOPMENT DIVISION PROPORTION OF CURRENT EXPENSE BUDGET BY PROGRAM IN FY89



FINANCE & DEVELOPMENT DIVISION PROGRAM BUDGET COMPARISON FY88 - FY89

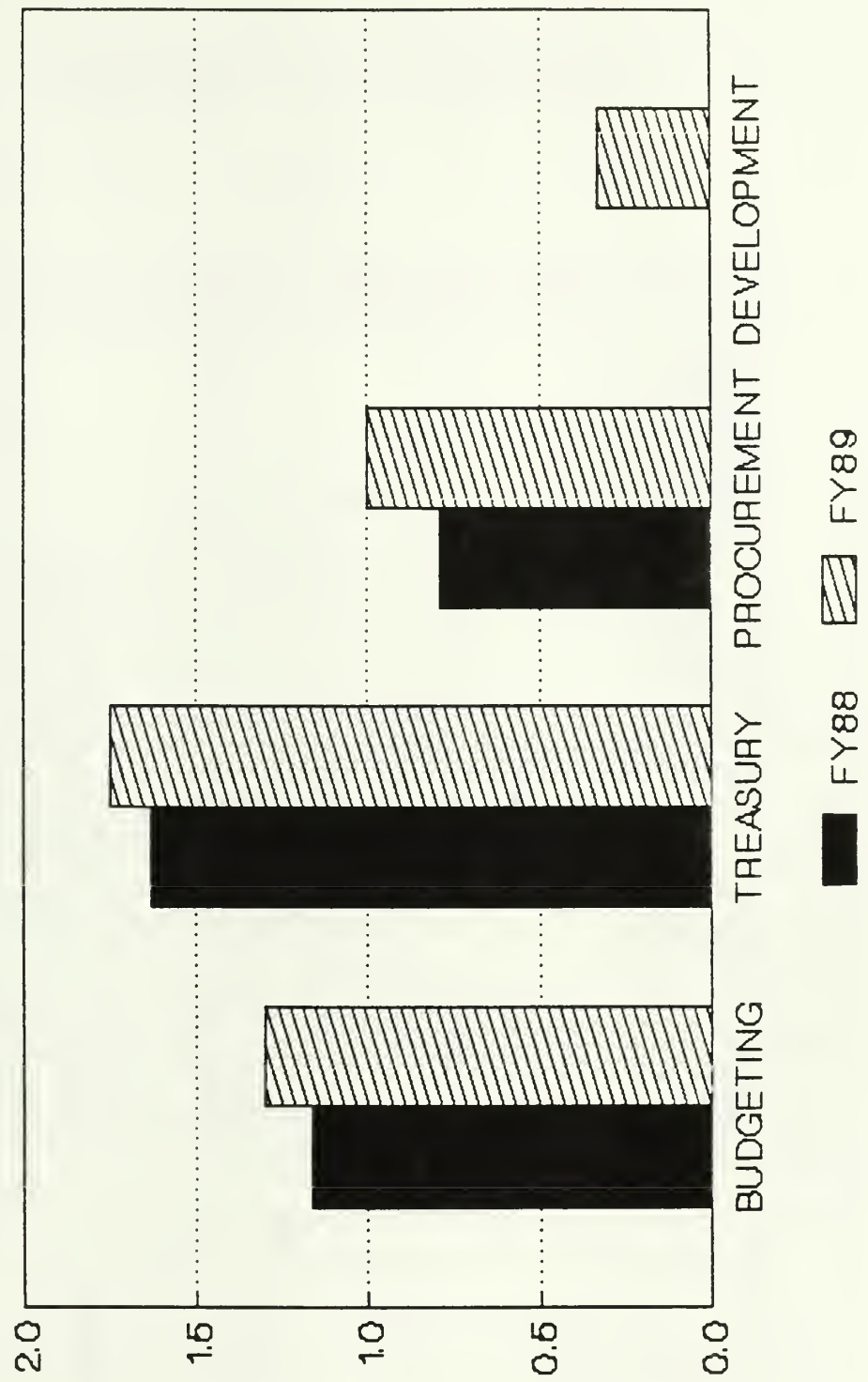


Table 19

DIVISION: FINANCE & DEVELOPMENT	PROGRAM SUMMARY BY LINE ITEM				
	EXPENSE LINE ITEM	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT %
	WAGES AND SALARIES:	\$1,895,666	\$3,536,531	\$3,153,417	\$1,257,751 66.3%
	OVERTIME:	30,994	11,268	7,500	(\$23,494) -75.8%
	FRINGE BENEFITS:	444,290	296,050	255,971	(\$188,319) -42.4%
	WORKERS' COMPENSATION:	0	0	0	\$0 N/A
	CHEMICALS:	0	0	0	\$0 N/A
	UTILITIES AND ENERGY:	0	0	0	\$0 N/A
	ONGOING MAINTENANCE:	1,000	0	0	(\$1,000) -100.0%
	NEW MAINTENANCE:	0	0	0	\$0 N/A
	EDUC, TRAIN & MEETINGS:	52,200	66,600	59,000	\$6,800 13.0%
	PROFESSIONAL SERVICES:	892,880	861,500	573,500	(\$319,380) -35.8%
	OTHER MATERIAL:	58,960	23,900	18,450	(\$40,510) -68.7%
	OTHER SERVICES:	202,575	338,600	334,200	\$131,625 65.0%
	TOTAL	3,578,565	5,134,449	4,402,038	\$823,473 23.0%

**Finance and Development Division Allocated Costs
of Division Director's Office**

Wages and Salaries \$214,906

Includes funding for three existing positions and one new position (Financial Analyst). Estimated wage increases for all Division employees is also budgeted in this line item.

Overtime \$ 2,000

Fringe Benefits \$255,621

Includes health and dental insurance for all Division employees.

Education, Training and Meetings

Tuition reimbursement	1,200
Investor tours	4,000
Training seminars and conferences	2,000
Local meetings	<u>300</u>
	\$ 7,500

Professional Services

Intergovernmental personnel agreement	25,000
Short-term consulting services	<u>25,000</u>
	\$ 50,000

Other Materials

Vehicle expense	2,000
Calculator, books, manuals	<u>200</u>
	\$ 2,200

Other Services

Memberships and subscriptions	<u>\$ 1,000</u>
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Total Allocated Costs	<u><u>\$533,227</u></u>
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FINANCE & DEVELOPMENT DIVISION SUMMARY OF DIRECT EXPENSES FY88 - FY89 COMPARISON

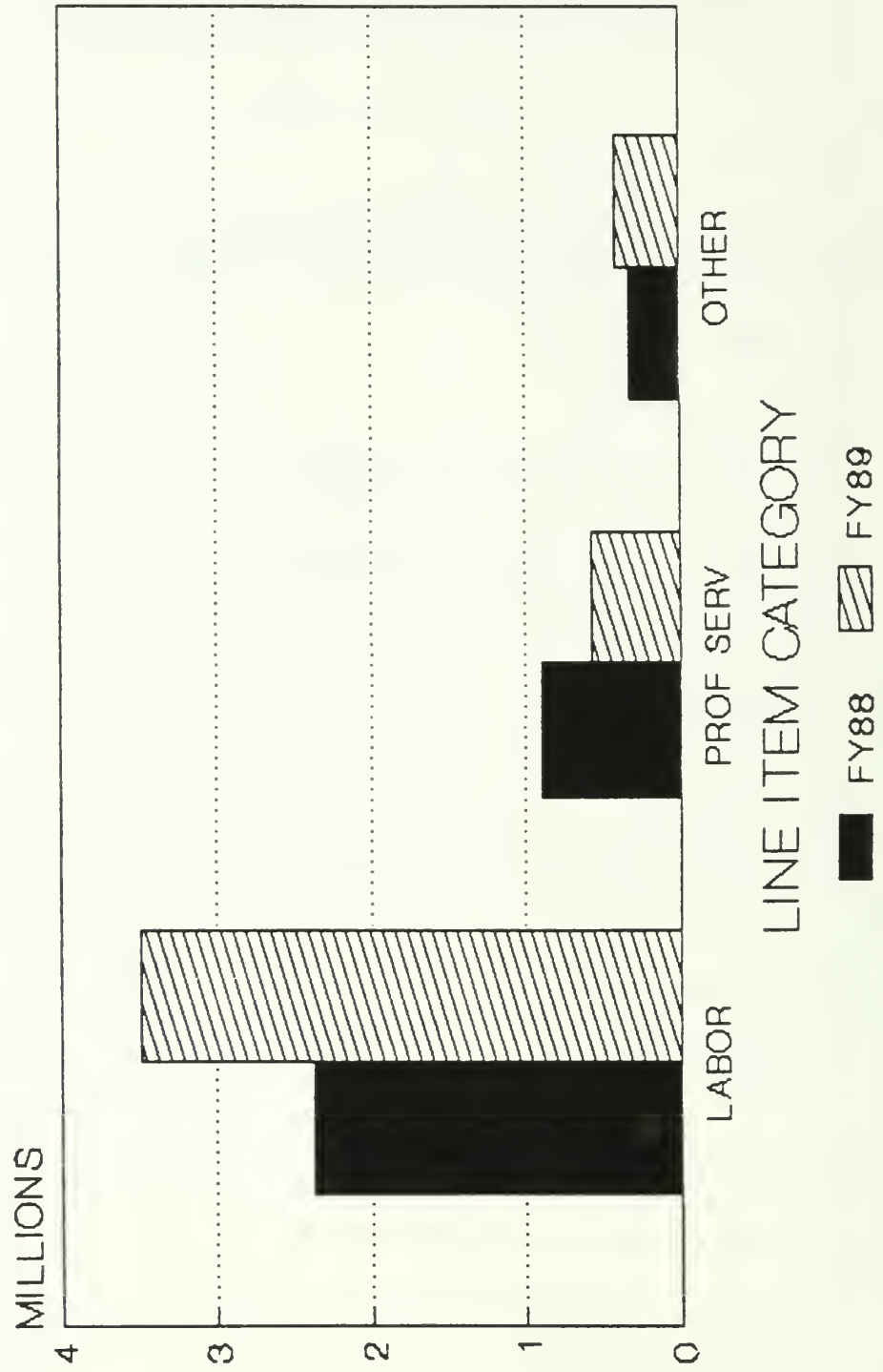


Table 21

MASSACHUSETTS WATER RESOURCES AUTHORITY
 FY89 CURRENT EXPENSE BUDGET
 PLANNED STAFFING LEVELS BY COST CENTER

FINANCE AND DEVELOPMENT DIVISION

DEPARTMENT/COST CENTER	POSITIONS IN FY88 BUDGET	POSITIONS TRANSFERRED IN FY88	POSITIONS TRANSFERRED TO FY89	POSITIONS ADDED IN FY88	PLANNED POSITIONS 6/30/88	POSITIONS TO BE FILLED IN FY89	PROPOSED ATTRITIONS	PLANNED POSITIONS 6/30/89
DIRECTOR'S OFFICE	3	-	-	-	3	1		4
BUDGET	12	-	-3	9	18	11		29
TREASURY								
TREASURER	6	-	-	2	8	-	(1)	7
COMPTROLLER	15	-	-2	-	13	4		17
RISK MANAGEMENT	-	3	-1	-	2	1		3
INFORMATION	-	-	-2	2	0	3		3
RETIREMENT BOARD	-	-	-	1	1	-		1
PROCUREMENT								
PURCHASING	9	-1	-	-	8	3		11
CONTRACT ADMIN.	6	-	-1	4	9	8		17
DEVELOPMENT	-	-	-	4	4	1		5
DIVISION TOTAL	51	2	-9	22	66	32	(1)	97

Program: Budgeting and Financial Planning

Program Description

This program integrates a number of financial planning, budgeting, and analytical activities which allow the MWRA to translate its immediate and long-range goals into coordinated, cost-effective projects and programs. The staff of the Budget Department provides support and input for the MWRA's decision-making process, particularly in policy and fiscal areas. The program aims to improve overall operational effectiveness, control costs and ensure the adequacy of resources. The program focuses on three specialized areas: capital planning and budgeting, current expense budgeting and performance review and rates management.

The capital planning and budgeting process provides for the comprehensive review and coordination of waterworks and wastewater capital improvement projects. This process identifies, assesses, and prioritizes key projects and develops long-term programs for capital investment timed to maximize system effectiveness, minimize cost, and assure the appropriate level of water and sewer service to meet demand. An effective capital planning process avoids the undertaking of unnecessary projects, provides information for developing financing plans, and improves the MWRA's bond rating.

The current expense budgeting and performance review staff coordinate the development and review of program plans, performance objectives, and resource requirements for all aspects of the MWRA's activities. Program and expenditure planning and evaluation of results help to improve water and sewer service by supporting effective management while minimizing rate increases. Performance review activities will provide important information on the cost-effectiveness of Authority operations.

The third part of this program, rates management, is dedicated to the careful and accurate analysis, monitoring and forecasting of revenue requirements; and to effective management of water and sewer rates. These activities aim to avoid financial shortfalls and to provide for manageable rate increases. The effective management of rates and the development of timely, sound strategies to generate supplemental revenue sources are critical to the MWRA's ability to carry out its mission.

Program Goals

- o to provide financial planning, management, and control capabilities that will ensure the availability of sufficient financial resources for effective service delivery and long-term capital improvements to the MWRA's waterworks and sewerage systems.

Performance Objectives

To bolster the financial planning and control process, a number of reports are produced including budget, schedule, and performance objective variance analyses; projected cash flow reports, and position control reports. Twenty-three of these reports are expected to be produced in FY88. In addition, capital and current expense budget variances are expected to be reduced in FY88 to 30 percent and 3 percent respectively, compared to 36 percent and 7 percent in FY87.

Further strengthening of the MWRA's financial management and budgeting capabilities is planned during FY89 with:

- o the preparation of 4 budget documents and 28 specialized reports.
- o the further reduction of capital and current expense budget variances to 25 percent and 1 percent respectively.
- o the emphasis, for the first time, on monitoring and achieving MWRA program performance objectives; a 70 percent achievement rate is targeted for FY89.
- o the development of performance standards and multi-year performance objectives for MWRA programs.
- o the development of expenditure forecasting and rates impact models.
- o the extension of published expenditure and revenue forecasts to five years beginning in FY90 budgets.

Program Budget

A total FY89 budget of \$1.3 million has been approved for the Budgeting and Financial Planning program. This amount includes \$1.1 million of direct costs and \$0.2 million in

allocated costs of the Division Director's Office. A summary of the budget by line item is presented in Table 22.

Wages and Salaries

During FY88, the MWRA Board of Directors approved an organizational structure for the Budget Department that included 35 positions. Nine were approved for hire in FY88 and eight were approved in the FY89 budget. The eight new FY89 positions are listed below in relation to the three functional areas of the Budgeting and Financial Planning program.

- Capital Budgeting and Planning
 - Budget Analyst
 - Capital Planner
 - Demand Analyst

- Current Expense Budgeting and Performance Review
 - Budget Analyst
 - Performance Review Analysts (2)
 - Secretary

- Revenue Management
 - Revenue and Finance Planner

These new positions will permit more thorough review of budget requests, improved planning and forecasting and the development of appropriate performance standards for the Authority. The FY89 cost of these positions is approximately \$226,000.

Professional Services

The budget for Professional Services includes \$65,000 for engineering/operational analyses in direct costs and \$14,783 in allocated costs.

These professional services contracts will assist the Authority in developing performance standards and will improve the Authority's ability to forecast expenditures and rate requirements.

Other Services

The major items in the Other Services line item for this program are the graphic design and printing of four budget documents and performance review reports. Total costs for these services are estimated to be \$37,000.

DIVISION: FINANCE & DEVELOPMENT	PROGRAM: BUDGETING & FINANCIAL PLANNING			
	TOTAL COSTS			
EXPENSE LINE ITEM	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT %
WAGES AND SALARIES:	\$487,671	\$1,215,217	\$1,081,098	\$593,427 121.7%
OVERTIME:	5,206	2,751	2,693	(\$2,513) -48.3%
FRINGE BENEFITS:	109,284	101,481	88,518	(\$20,766) -19.0%
WORKERS' COMPENSATION:	0	0	0	N/A
CHEMICALS:	0	0	0	N/A
UTILITIES AND ENERGY:	0	0	0	N/A
ONGOING MAINTENANCE:	336	0	0	(\$336) -100.0%
NEW MAINTENANCE:	0	0	0	N/A
EDUC, TRAIN & MEETINGS:	12,161	15,513	14,967	\$2,806 23.1%
PROFESSIONAL SERVICES:	528,735	316,444	79,783	(\$448,952) -84.9%
OTHER MATERIAL:	1,462	3,922	3,700	(\$762) -17.1%
OTHER SERVICES:	13,094	44,125	43,796	\$30,702 234.5%
TOTAL	\$1,160,949	\$1,699,452	\$1,314,555	\$153,606 13.2%

Program: Treasury and Accounting Services

Program Description

The Treasury and Accounting Services staff of the Treasury Department manages a number of specialized functions and activities that ensure the sound fiscal condition and responsible financial operations of the MWRA. These activities are handled by four separate sections: the Treasurer's office, Comptroller's office, Risk Management group and Information Services group.

The **Treasurer's Office** collects revenues, secures loans to fund the MWRA's capital programs, invests available cash assets and disburses funds to meet payroll and other Authority financial obligations.

The **Comptroller's office** prepares the MWRA's financial statements, processes accounts payable, maintains general ledger and fixed assets records, processes weekly payroll, and maintains property inventory records.

The **Risk Management** group assesses the MWRA's insurance needs, develops and administers appropriate insurance programs, and investigates accidents and potential insurance claims.

The **Information Services** Group, a newly created unit, will address the MWRA's need for more timely and specialized management reports. The staff will develop and produce improved financial management reports, including monthly and quarterly reports for use by all MWRA divisions. This information will be presented in a comprehensive, usable form. In addition, Information Services will prepare more specialized reports on an as-needed basis. The specific functions of this group will increase the level of communication and facilitate the planning and management process throughout the MWRA.

Program Goals

- o to ensure sound fiscal management of the MWRA.
- o to maintain complete, current financial records that accurately reflect the financial condition of the MWRA.
- o raise funds for MWRA's current operating and capital needs and prepare MWRA for the revenue bond market.
- o to produce timely, comprehensive management reports to facilitate more effective planning, management and decision-making throughout the MWRA.

Performance Objectives

- o obtain an audit opinion without qualifying statements,
- o produce financial feasibility study preparatory to MWRA bond issuance,
- o reduce late payments of bills from user communities from 4% to 2%, annualized,
- o exceed 90 day treasury rate for return on funds invested,
- o produce at least six monthly financial statement reports within one month of the period's end,
- o set up and staff information services group to develop additional management reports responsive to the Authority's needs.

Program Budget

The FY89 budget for the Treasury and Accounting Services program is \$1.75 million, an increase of 7 percent relative to FY88. Labor costs, professional services and other services account for more than 95 percent of the budget for this program. Table 23 summarizes the budget by line item.

Wages and Salaries

As part of the Finance and Development Division's recent reorganization, four new positions were approved for the Treasury Department, increasing the total number of approved FY88 positions to 28. An additional seven positions were included in the reorganization of which three attrition, are included in this budget for funding in FY89. The positions are listed below in relation to the program functions that they will support.

Treasury Services

Account coordinator (attrited)

Accounting Services

Chief accountant

Secretary II

Information Services

Information analyst

The FY89 budgeted cost for these new positions is approximately \$87,447.

Professional Services

The Professional Services budget for this program includes funding for the Authority's financial advisor, an end-of-year audit of the Authority's financial records and computer programming for development of new management accounting reports. All professional services budgeted for this program plus allocated professional services costs are listed below.

Financial advisor	\$240,000
Financial audit	75,000
Insurance advisor	15,000
Computer programming	20,000
Legal & audit services for	
Retirement board	4,500
Allocated costs	<u>20,090</u>
	\$374,590

Other Services

The major items budgeted in the Other Services line item for this program are processing of weekly paychecks for all Authority personnel and data processing for financial and management accounting reports. The Authority's need for these external data processing services should be significantly reduced with the completion of the financial and operations management information systems at the end of FY89 (see MIS program description).

DIVISION: FINANCE & DEVELOPMENT	PROGRAM: TREASURY AND ACCOUNTING SERVICES			
	TOTAL COSTS			
EXPENSE LINE ITEM	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT %
WAGES AND SALARIES:	\$880,789	\$1,161,168	\$1,073,736	\$192,947 21.9%
OVERTIME:	13,426	4,090	2,172	(\$11,254) -83.8%
FRINGE BENEFITS:	206,687	96,710	86,093	(\$120,594) -58.3%
WORKERS' COMPENSATION:	0	0	0	\$0 N/A
CHEMICALS:	0	0	0	\$0 N/A
UTILITIES AND ENERGY:	0	0	0	\$0 N/A
ONGOING MAINTENANCE:	455	0	0	(\$455) -100.0%
NEW MAINTENANCE:	0	0	0	\$0 N/A
EDUC, TRAIN & MEETINGS:	24,146	27,364	20,514	(\$3,632) -15.0%
PROFESSIONAL SERVICES:	345,048	413,331	374,590	\$29,542 8.6%
OTHER MATERIAL:	42,239	8,738	3,624	(\$38,615) -91.4%
OTHER SERVICES:	119,798	194,916	191,102	\$71,304 59.5%
TOTAL	\$1,632,588	\$1,906,316	\$1,751,831	\$119,243 7.3%

Program: Procurement

Program Description

The Procurement Department staff is working with all MWRA divisions to provide an expanded range of services in developing, reviewing, negotiating, and monitoring contracts for goods and services. In the process, the staff is aiming to procure these goods and services more quickly and economically, while adhering to high standards of quality and performance.

The **Purchasing** component of this program concentrates on obtaining materials, supplies, equipment and non-professional services. Beginning in FY88, all materials and non-professional services in excess of \$2,000 are being procured centrally. Divisions retain the responsibility for the direct purchases in the field of all items costing less than \$2,000. In FY89, the threshold for centrally purchased items will be reduced further to \$500. This change will greatly increase the number of purchase orders and contracts that must be handled by the Procurement Program staff.

Activities under **Contract Management** include the advertisement, negotiation and monitoring of all professional services and construction contracts. Significant increases in the MWRA's professional services and construction work planned for FY89 will result in a substantially increased workload for the contracts management staff.

Program Goals

- o to expand and improve contract management services provided to all Divisions, minimizing project delays and securing high-quality professional and construction services at a competitive cost.
- o to procure high-quality goods and services in a timely manner at the lowest possible cost.

Performance Objectives

In the area of purchasing, the number of competitive bids increased from 74 in FY87 to an expected 150 in FY88. During this same period, the dollar value of MBE and WBE purchase contracts awarded is anticipated to increase by 50 percent. With the lower limit on centrally purchased items reduced to \$500 in FY89, there will be an increased workload for central purchasing staff as well as expanded

opportunities for competitive bidding and targeting of MBE/WBE contracts. For FY89, the Purchasing section of the Procurement program has outlined the following objectives:

- o decrease average purchase requisition processing time from 16 to 12 days.
- o advertise and award 200 competitive bids totaling more than \$8,000,000.
- o award \$350,000 worth of M/WBE contracts.
- o increase from 5 to 10 the total number of Authority-wide annual purchase contracts for items required by several divisions.

The increases in the MWRA's capital and operating activities will result in a greater demand for timely and highly professional contract administration and management. Greater standardization of contract negotiation, award and monitoring procedures will reduce project delays and cost overruns. Activity in these areas anticipated during FY89 includes:

- o Reviewing 100% of all contracts and amendments submitted to the contract office.
- o Setting up and staffing a centralized specification distribution center for construction contract specifications and plans for prospective bidders.
- o Expanding reporting capabilities of the contract tracking data base to include amendment and charge order data and produce quarterly contract management reports.

Program Budget

The FY89 budget for the Procurement program is \$1 million, an increase of \$221,000 from FY88. As with all of the programs of the Finance and Development Division more than 95 percent of the budget of this program is for labor costs, professional services and other services. A summary of the Procurement program budget by line item is presented in Table 24.

Wages and Salaries

The FY88 budget for the Procurement Department included funding for 15 positions. An additional three positions

were subsequently approved for hire in FY88. The FY89 budget includes funding for a total of 10 new positions, which will increase the total budgeted positions to 28. The FY89 cost of these new positions is approximately \$198,000. The FY89 positions are listed below by their program function.

- Purchasing
 - Buyers (2)
 - Secretary

- Contract Administration
 - Assistant contract managers (2)
 - Contract monitors (2)
 - Documents assistant
 - Data control coordinator
 - Secretary

These new positions are required in order to provide more thorough review of purchase and contract agreements, and to handle an increasing volume of procurement activity.

Professional Services

The two professional services items budgeted for the Procurement program are \$3,000 for engineering services to assist in drafting technical purchase specifications, and \$1,000 for testing of purchased items. An additional \$11,341 in allocated Professional Services is included in the budget for this program.

Other Services

Of the \$98,000 budgeted for Other Services in the Procurement program, \$90,000 is for advertisement of bids for materials and services. The balance of the budgeted amount is for printing of purchase order forms, professional memberships and subscriptions and allocated costs.

Table 24

DIVISION: FINANCE & DEVELOPMENT	PROGRAM: PROCUREMENT TOTAL COSTS				VARIANCE BETWEEN FY88 AND FY89 AMOUNT	%
	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL			
EXPENSE LINE ITEM						
WAGES AND SALARIES:	\$527,207	\$904,307	\$801,577	\$274,370	52.0%	
OVERTIME:	12,361	2,567	2,512	(\$9,849)	-79.7%	
FRINGE BENEFITS:	128,319	76,690	65,639	(\$62,680)	-48.8%	
WORKERS' COMPENSATION:	0	0	0	\$0	N/A	
CHEMICALS:	0	0	0	\$0	N/A	
UTILITIES AND ENERGY:	0	0	0	\$0	N/A	
ONGOING MAINTENANCE:	210	0	0	(\$210)	-100.0%	
NEW MAINTENANCE:	0	0	0	\$0	N/A	
EDUC, TRAIN & MEETINGS:	15,893	16,326	16,201	\$308	1.9%	
PROFESSIONAL SERVICES:	19,096	27,868	15,341	(\$3,755)	-19.7%	
OTHER MATERIAL:	12,259	6,336	6,259	(\$6,000)	-48.9%	
OTHER SERVICES:	69,683	98,663	98,477	\$28,794	41.3%	
TOTAL	\$785,028	\$1,132,756	\$1,006,006	\$220,978	28.1%	

Program: Real Property Acquisition & Development

Program Description

The staff of the Development Department negotiate the purchase or lease of real estate, land, and associated major capital equipment necessary to support the MWRA's capital projects. In addition, the staff assists in coordinating the MWRA's major construction plans and schedules with the activities of other federal, state and local agencies. The staff will also participate in locating and selecting sites, performing financial analyses of potential acquisitions, and managing the sale or lease of MWRA assets.

Program Goals

- o to acquire and develop in a timely and cost-effective manner the real property needed to complete the MWRA's major capital projects.

Performance Objectives

During FY89, the Real Property Acquisition and Development staff is planning to:

- o Acquire four satellite parking sites for water transportation of construction workers to Deer and Nut Islands,
- o Integrate Department efforts with Residuals Management staff in preparation of acquisition of designated parcels,
- o acquire water transportation equipment needed for the construction of the Deer Island wastewater treatment plant,
- o coordinate the development of the Fore River Staging Area as the primary staging area for Deer Island construction; manage disposition of surplus property; manage the redevelopment of the Fore River Railway and coordinate MWRA efforts with Mass. Shipbuilders;
- o Establish format for centralized management of real estate data base of MWRA properties and related real estate interests.

- o In conjunction with the Law Division, develop Real Estate Acquisition and Disposition Procedures for MWRA;
- o Assist Division staff with the acquisition of necessary property supporting MWRA projects.
- o Review proposals and oversee acquisitions of office complex for future MWRA needs.

Program Budget

The Real Property Acquisition and Development program budget for FY89 is \$329,646, of which approximately \$293,000 are direct costs of the program and \$37,000 is the allocated cost of the Division Director's Office. Approximately 97 percent of the budget for the program is for labor costs and professional services. Table 25 summarizes the budget for the program by line item.

Wages and Salaries

The four initial staff of the Development department were approved for hire in FY88. One new position, a financial analyst, has been approved for hire in FY89. An increased staff will provide more detailed financial and technical analysis of real property purchase and lease options. The FY89 budgeted cost of this new positions is \$23,233.

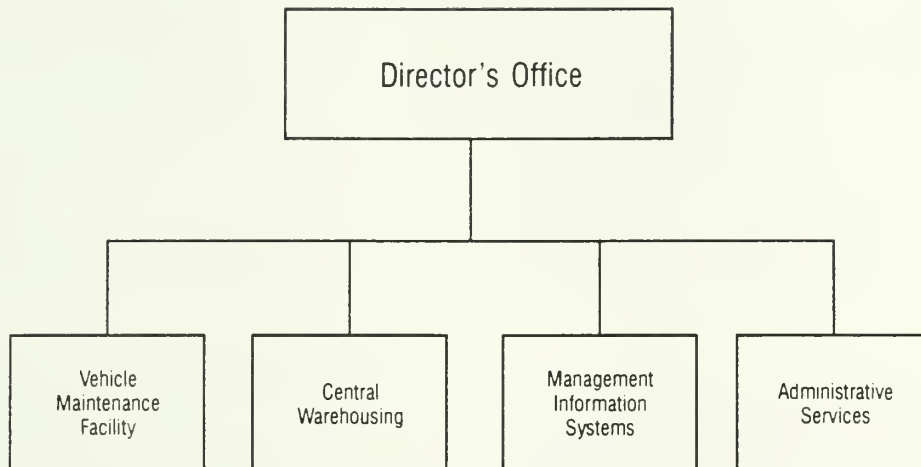
Professional Services

The performance objectives for this program include the purchase of four to eight sites for MWRA capital projects. It is estimated that these real estate acquisitions will require \$100,000 of legal, appraisal and broker's fees. The remaining Professional Services budget amount for this program is allocated from the Director's Office.

DIVISION: FINANCE & DEVELOPMENT	PROGRAM: REAL PROPERTY ACQUISITION & DEVELOPMENT				
	TOTAL COSTS				
	FISCAL YEAR		VARIANCE BETWEEN		
	1988	1989	1989	FY88 AND FY89	%
	BUDGET	PROPOSED	FINAL	AMOUNT	
WAGES AND SALARIES:	\$0	\$255,840	\$197,005	\$197,005	N/A
OVERTIME:	0	1,860	123	\$123	N/A
FRINGE BENEFITS:	0	21,169	15,722	\$15,722	N/A
WORKERS' COMPENSATION:	0	0	0	\$0	N/A
CHEMICALS:	0	0	0	\$0	N/A
UTILITIES AND ENERGY:	0	0	0	\$0	N/A
ONGOING MAINTENANCE:	0	0	0	\$0	N/A
NEW MAINTENANCE:	0	0	0	\$0	N/A
EDUCATION, TRAINING, & MEETINGS:	0	7,398	7,318	\$7,318	N/A
PROFESSIONAL SERVICES:	0	103,858	103,786	\$103,786	N/A
OTHER MATERIAL:	0	4,904	4,867	\$4,867	N/A
OTHER SERVICES:	0	897	826	\$826	N/A
TOTAL	\$0	\$395,926	\$329,646	\$329,646	N/A

Administrative Support







ADMINISTRATIVE SUPPORT DIVISION

Mission Statement

The Administrative Support Division is responsible for providing comprehensive support services to facilitate the activities of the MWRA's operating, engineering, construction, and administrative divisions. The Division oversees the functions of headquarters facility management, centralized administrative services, management information systems, and central vehicle maintenance. In addition, the Division is managing the maintenance and operation of the Fore River Staging Area.

Programs and Organizational Units

The Administrative Support Division is organized into four departments as shown in the chart on the facing page. The Administrative Services Department is further divided into three cost centers, one responsible for central administrative services, one for facility management at headquarters and the other for operation and maintenance of the Fore River Staging Area. The Division Director's Office provides coordinated management for the four division programs listed below:

- Administrative Services
- Fore River Staging Area
- Vehicle Management and Maintenance
- Management Information Systems

In addition, the Director's Office will provide assistance in the development of a new program for central warehousing and inventory control. A matrix summarizing the relationship between the organizational units and programs of the Administrative Support Division is presented in Table 26.

Major Division Objectives

The rapid expansion of MWRA operations, the acquisition of the Fore River Staging Area and the pressing need to develop management information systems have all greatly increased the demand for the services provided by the Administrative Support Division. To meet this demand, the Division has outlined the following priority objectives for FY89:

- o provide suitable office space, facilities management and administrative services to over 650 headquarters personnel.

- o design and implement central information systems for capital program management, financial management and operations management.
- o provide complete, routine maintenance of all MWRA vehicles at least three times per year.
- o secure, maintain and coordinate development of the Fore River Staging Area.

Division Budget Summary

The Administrative Support Division has a \$10.5 million budget. This amount is an increase of 85 percent over the FY88 budget. The expansion of central headquarters' office space, the acquisition and management of the Fore River Staging Area and the expansion of the Management Information Systems program have all contributed to a considerable increase in the FY89 budget. A summary of this budget by program is presented in Table 27. The costs of the Division Director's Office and Central Warehousing have been allocated to the Division's four program budgets. These allocated costs are listed in detail in Table 28.

On a line item basis, Wages and Salaries, Ongoing Maintenance, Other Materials and Other Services (which covers headquarters rent) account for 73 percent of the budget of the Administrative Support Division. Utilities and Energy, Ongoing Maintenance and Other Material account for 19% of the budget and cover operating costs associated with the Charlestown Headquarters and the Fore River Staging Area. Table 29 summarizes the Division budget by line item.

Wages and Salaries

During FY88 a total of 23 new positions were approved for the Fore River Staging Area and the MIS Department. Another 11 positions were transferred from the Water and Sewer Divisions to the Vehicle Maintenance Department. An additional 33 positions are approved for FY89, primarily for the Administrative Services, Fore River Staging Area and MIS programs. Existing and new positions for the Division are summarized in Table 30. More detailed discussion of new positions is contained in the program budget descriptions.

Ongoing Maintenance

The primary maintenance costs for this division are for repair and servicing of office equipment at central headquarters, the repairs to the facilities at the Fore River Staging Area and automobile supplies at the Vehicle Maintenance Facility.

Utilities and Energy

This line item is comprised of the heating and lighting costs for central headquarters, the vehicle maintenance garage and the Fore River facilities.

Other Materials

Office supplies and equipment, library materials, postage, and transportation expenses for all programs based at the central headquarters facility account for 88 percent of the budgeted amount for this line item. The balance is for work clothes and safety equipment at the Vehicle Maintenance and Fore River Staging Area programs.

Other Services

Telephone, printing and duplicating, and space lease costs for the headquarters facilities account for 85 percent of the Administrative Support Division's Other Services budget.

Table 26

ADMINISTRATIVE SUPPORT DIVISION
MATRIX OF PROGRAMS AND ORGANIZATIONAL UNIT

PROGRAM	DIRECTOR'S OFFICE	VEHICLE MAINTENANCE FACILITY	MANAGEMENT INFORMATION SYSTEMS	ADMINI- STRATIVE SERVICES	CENTRAL WAREHOUSING*
VEHICLE MAINTENANCE	X	X			
MANAGEMENT INFORMATION SYSTEMS	X		X		
ADMINISTRATIVE SERVICES	X			X	
FORE RIVER STAGING AREA	X			X	

*The Central Warehousing Program is not yet operational. Initial costs of this Department have been allocated to the other programs of this Division.

Table 27

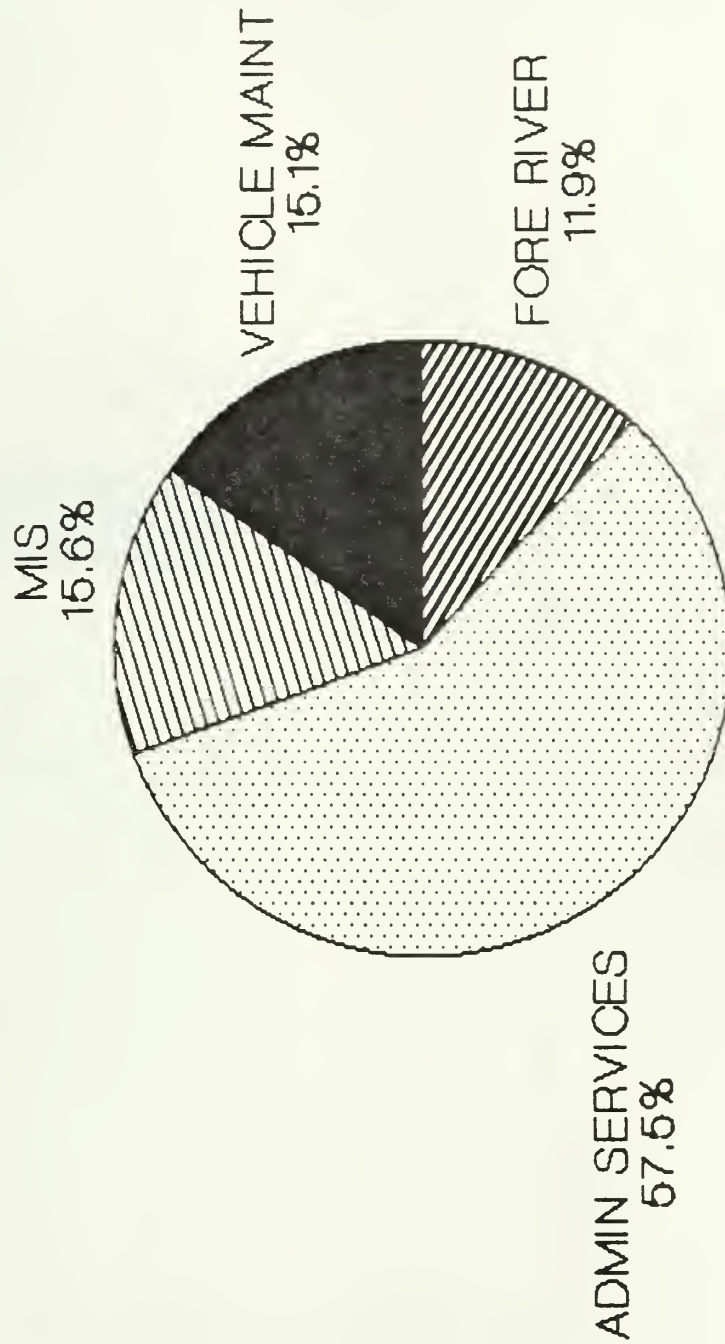
DIVISION: ADMINISTRATIVE SUPPORT	DIVISION SUMMARY BY PROGRAM				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
PROGRAMS					
VEHICLE MAINTENANCE	\$1,187,551	\$1,589,923	\$1,576,209	\$388,658	32.7%
MANAGEMENT INFORMATION SYSTEMS	628,274	1,895,739	1,630,815	\$1,002,541	159.6%
ADMINISTRATIVE SERVICES	3,831,440	6,071,489	6,014,561	\$2,183,121	57.0%
FORE RIVER STAGING AREA	0	1,067,184	1,243,970	\$1,243,970	N/A
DIVISION TOTAL:	\$5,647,265	\$10,624,335	\$10,465,554	\$4,818,290	85.3%

Table 28

**Administrative Support Division Allocated Costs of
Division Director's Office and Central Warehousing**

Wages and Salaries	\$286,472
Includes funding for two existing positions and three new positions (Executive Assistant, Director, Central Warehousing, and a Secretary). This line item also includes wage increases for all Division employees.	
Overtime	\$ 4,207
Fringe Benefits	\$281,971
This line item includes health and dental insurance for all Division employees.	
Education, Training and Meetings	
Tuition Reimbursement	\$ 500
Professional Meetings and Seminars	<u>3,300</u>
	\$ 3,800
Professional Services	\$ 20,000
General Consultants	
Other Materials	
Vehicle Expense	\$ 2,360
Typewriter, books, calculators	<u>3,700</u>
	\$ 6,060
Other Services	
Memberships	\$ 1,000
Subscriptions	<u>500</u>
	\$ 1,500
Total Allocated Costs	<u><u>\$604,011</u></u>

ADMINISTRATIVE SUPPORT DIVISION PROPORTION OF CURRENT EXPENSE BUDGET BY PROGRAM IN FY89



Graph 16

ADMINISTRATIVE SUPPORT DIVISION PROGRAM BUDGET COMPARISON FY88 - FY89

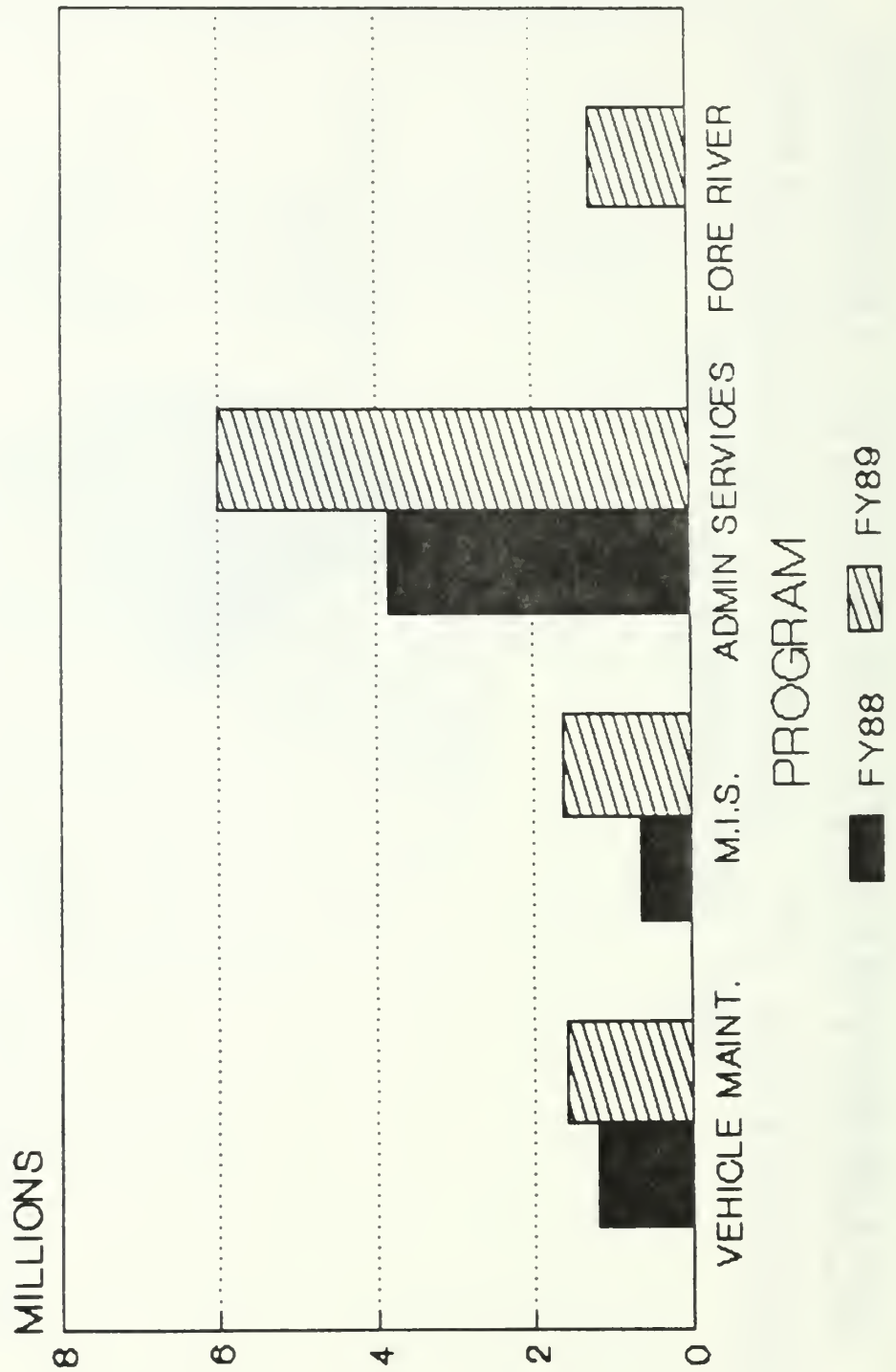


Table 29

DIVISION: ADMINISTRATIVE SUPPORT	PROGRAM SUMMARY BY LINE ITEM			
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$1,168,917	\$3,378,851	\$3,178,122	\$2,009,206 171.9%
OVERTIME:	\$30,833	\$57,982	\$70,982	\$40,149 130.2%
FRINGE BENEFITS:	\$71,460	\$272,481	\$284,221	\$212,762 297.7%
WORKERS' COMPENSATION:	\$0	\$0	\$0	\$0 N/A
CHEMICALS:	\$0	\$2,400	\$2,400	\$2,400 N/A
UTILITIES AND ENERGY:	\$203,750	\$564,413	\$701,400	\$497,650 244.2%
ONGOING MAINTENANCE:	\$138,700	\$739,740	\$719,740	\$581,040 418.9%
NEW MAINTENANCE:	\$450,050	\$122,000	\$120,600	(\$329,450) -73.2%
EDUC., TRAIN, & MEETINGS:	\$144,350	\$340,090	\$260,090	\$115,740 80.2%
PROFESSIONAL SERVICES:	\$100,925	\$140,000	\$100,000	(\$925) -0.9%
OTHER MATERIAL:	\$436,120	\$609,890	\$560,010	\$123,890 28.4%
OTHER SERVICES:	\$2,902,160	\$4,396,489	\$4,467,989	\$1,565,829 54.0%
DIVISION TOTAL:	\$5,647,265	\$10,624,335	\$10,465,554	\$4,818,290 85.3%

ADMINISTRATIVE SUPPORT DIVISION SUMMARY OF DIRECT EXPENSES FY88 - FY89 COMPARISON

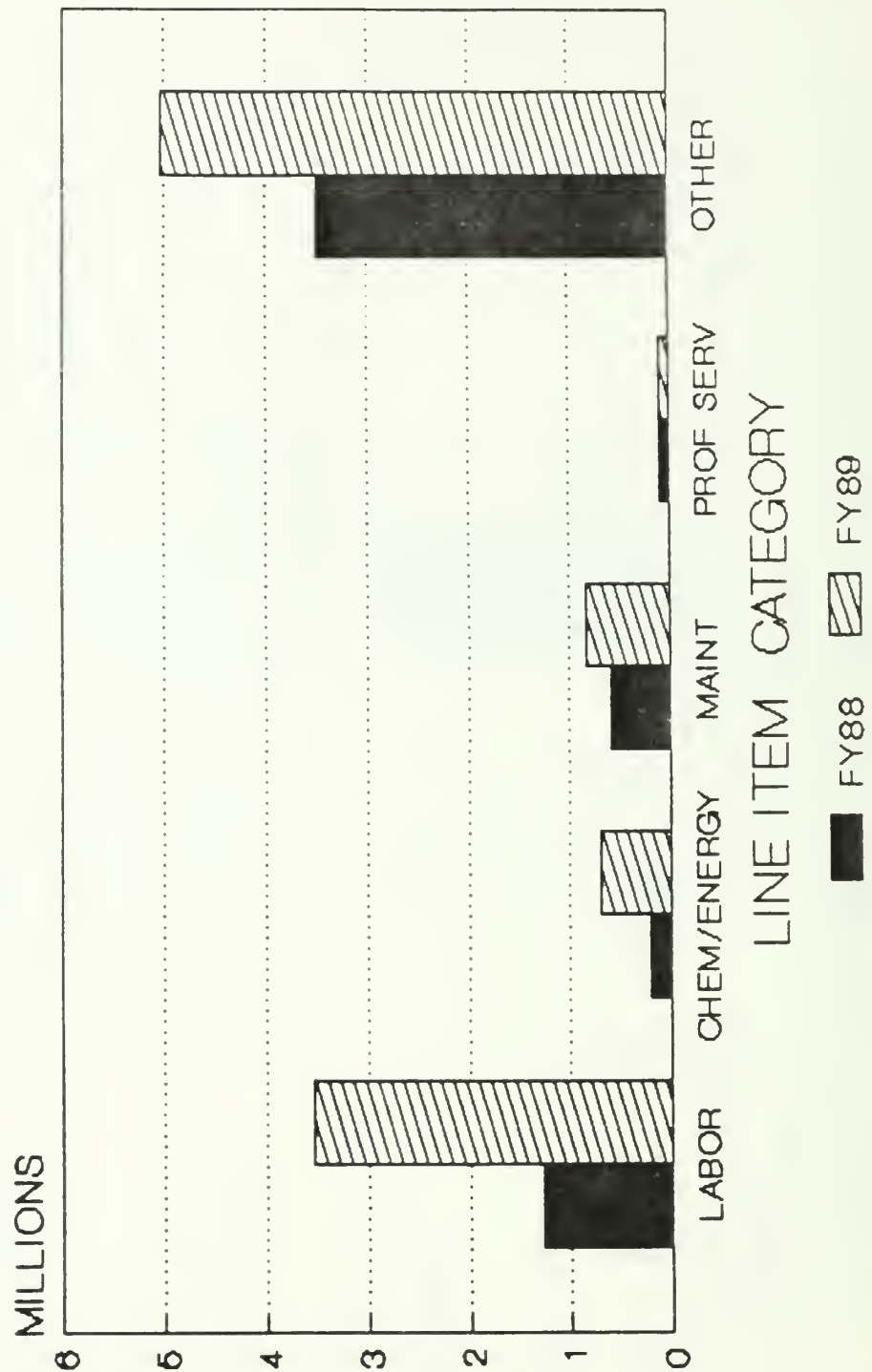


Table 30

MASSACHUSETTS WATER RESOURCES AUTHORITY
 FY89 CURRENT EXPENSE BUDGET
 PLANNED STAFFING LEVELS BY COST CENTER

ADMINISTRATIVE SUPPORT DIVISION

DEPARTMENT/COST CENTER	POSITIONS IN FY88 BUDGET	POSITIONS TRANSFERRED IN FY88	POSITIONS TRANSFERRED TO FY89	POSITIONS ADDED IN FY88	PLANNED POSITIONS 6/30/88	POSITIONS TO BE FILLED IN FY89	PROPOSED ATTRITIONS	PLANNED POSITIONS 6/30/89
DIRECTOR'S OFFICE	3	-	-	-	3	1	-	4
RISK MANAGEMENT	5	(5)	-	-	-	-	-	-
VEHICLE MAINTENANCE	14	11	-	-	25	-	-	25
MIS	10	-	-3	8	15	18	-	33
ADMINISTRATIVE SERVICES	25	-	-	-	25	8	-	33
FORE RIVER STAGING AREA	-	-	-	16	16	7	-	23
CENTRAL WAREHOUSING	-	-	-	-	-	2	-	2
DIVISION TOTAL	57	6	-3	24	84	36	0	120

Program: Vehicle Management and Maintenance

Program Description

The MWRA currently operates and maintains approximately 250 vehicles, including cars, vans, trucks and construction equipment. Approximately, 70 percent of this fleet has been purchased by the MWRA since 1985. The remaining portion was transferred from the MDC. These transferred vehicles have an average age of greater than 7 years. Approximately 120 vehicles are to be purchased by the MWRA in FY88 and FY89. Prior to FY89, MWRA vehicles received maintenance at numerous facilities operated by the Waterworks and Sewerage Divisions or at private service stations. At the end of FY87, the MWRA leased a facility in Charlestown and began to equip it to provide centralized maintenance for all MWRA vehicles. Vehicle maintenance personnel have been hired or transferred from the operating divisions to provide the initial staff for this facility, and maintenance activity is now underway.

FY89 represents the first full year of operation for the central Vehicle Management and Maintenance Program. The central vehicle maintenance facility will provide or coordinate all service work from oil changes to major repairs for all MWRA vehicles. Standardized maintenance schedules will be implemented in order to maximize the useful life of the MWRA vehicle fleet. Vehicle fuel purchase and control procedures are currently being developed and will also be implemented by this Department.

Program Goal

- o provide consistent, cost-effective maintenance to all MWRA vehicles in order to eliminate vehicle malfunctions and maximize the useful life of each vehicle in the fleet.

Program Objectives

- o complete an inventory and evaluation of all MWRA vehicles.
- o develop a tracking system for vehicle mileage, fuel consumption, maintenance and repair records.
- o implement a preventive maintenance program to include complete servicing of all vehicles at least three times a year.

- o prepare specifications for new vehicles, consistent with operating division requirements.

Program Budget

The Central Vehicle Management and Maintenance program began operations in FY88 with a total of 24 approved positions. No additional positions were added in FY89. The FY89 budget is \$1,576,209. This amount includes \$1,471,389 of direct costs and \$104,820 of allocated costs from both the Division Director's Office and the Central Warehouse Department. A summary of the budget by line item is shown in Table 31.

Utilities

The Utilities and Energy budget for Vehicle Maintenance covers expenses as shown below.

Fuel oil	\$24,000
Electricity	<u>\$90,000</u>
Total	\$114,000

These budget amounts were based upon first year operations experience and the price projections outlined in the Budget Overview section of this document.

Ongoing Maintenance

The budget for this line item consists mostly of repairs to maintenance equipment and purchase of automotive parts. The budgeted amounts for the major costs are listed below.

Cleaning and groundskeeping materials	\$ 11,400
Automotive parts	188,000
Special tools	15,000
Waste removal (solid and oils)	30,000
Maintenance of equipment	30,000
Miscellaneous materials & services	<u>25,840</u>
Total	\$300,240

Miscellaneous materials and services includes repairs to the parking area, paint stripping, batteries, and maintenance for the copier.

New Maintenance

The following items are included in this \$14,000 budget: \$6,000 for painting vehicles; \$6,000 for maintenance of new equipment; and \$2,000 for fence and lighting repairs.

Education Training and Meetings

The direct costs for this line item are \$15,000: \$4,500 for tuition reimbursement and \$10,500 for professional meetings and seminars.

Other Materials

This line item covers the following items: office supplies (\$3,000); Postage (\$520); Safety Gear (\$4,200); Tools (\$900); Work Clothes (\$8,800); and Vehicle Expense (\$8,000).

Other Services

A total of \$388,813 in other services has been approved for the Vehicle Maintenance program, of which slightly more than \$380,000 is for the lease of the facility. The remaining amount is for printing and duplicating, memberships and subscriptions and miscellaneous equipment rentals.

Table 31

DIVISION: ADMINISTRATIVE SUPPORT	VEHICLE MAINTENANCE			
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$253,181	\$658,476	\$624,932	\$371,752 146.8%
OVERTIME:	9,318	35,574	30,578	21,260 228.2%
FRINGE BENEFITS:	16,101	56,455	58,771	42,670 265.0%
WORKERS' COMPENSATION:	0	0	0	N/A
CHEMICALS:	0	0	0	N/A
UTILITIES AND ENERGY:	53,750	37,188	114,000	60,250 112.1%
ONGOING MAINTENANCE:	0	300,240	300,240	300,240 N/A
NEW MAINTENANCE:	421,500	50,000	14,000	(407,500) -96.7%
EDUC, TRAIN, & MEETINGS:	9,230	15,564	15,567	6,337 68.7%
PROFESSIONAL SERVICES:	25,000	2,966	2,984	(22,016) -88.1%
OTHER MATERIAL:	21,089	38,649	26,324	5,236 24.8%
OTHER SERVICES:	378,383	394,811	388,813	10,430 2.8%
PROGRAM TOTAL:	\$1,187,551	\$1,589,923	\$1,576,209	\$388,658 32.7%

Program: Management Information Systems

Program Description

The Management Information Systems staff of the Administrative Support Division is planning and implementing an ambitious, multi-phase program that will automate and integrate MWRA information systems. This comprehensive management information system will significantly streamline and consolidate current information processing procedures; further enhance project planning, financial management, and control; and improve the efficiency and overall operation of the MWRA.

During FY89, this program will focus on two major initiatives that will allow the MWRA to address its management information priorities:

1. Implementation of a capital program management system, a financial management system and an operations management system.

These systems will accommodate all planning, budgeting, scheduling, payment processing, and status-tracking of the MWRA's capital program. They will also greatly assist staff in performing key accounting, budgeting, rates management, and cash-flow management functions.

The operations management system will maintain and organize a variety of information to assist and support the Waterworks and Sewerage Divisions. Specific functions of the operations management system will include laboratory data management, plant operations monitoring, NPDES monitoring and compliance, large-user tracking and harbor water quality monitoring.

2. Acquisition and implementation of office automation hardware and software systems.

This aspect of the MIS program will include the purchase of personal computer hardware, software, and peripherals for use in all MWRA divisions. MIS staff will provide system configuration for specific applications, diagnostic testing and installation, management of preventive maintenance and repair, and administration of computer training programs.

In addition, the Management Information Systems staff will provide support services to all MWRA divisions in the development of systems and operations standards, custom

software programming, data base design and development, data network implementation, and office automation support.

Program Goals

- o to implement and manage an effective central information system to facilitate the operations and performance of all MWRA divisions.
- o to successfully apply various computer technologies to current information-processing problems, increasing the efficiency and productivity of the MWRA's managerial, professional and administrative staff.
- o to assist MWRA employees in becoming more proficient in the use and application of computer technology.

Performance Objectives

In an effort to implement an effective information system, more than 200 personal computers have been installed in all MWRA divisions during FY87 and FY88. During this period, about 450 MWRA employees have been trained in personal computer applications.

During FY89, implementation of a management information system is scheduled to continue with:

- o begin development and implementation of the central information systems dedicated to the MWRA's key priority areas: the Hewlett-Packard capital program management (PMU), and the financial planning and management module, application #1 (of 8).
- o installation and configuration of 75 personal computers.
- o coordination of personal computer training for users of the new personal computers.

Program Budget

The total budget for the MIS program is \$1,630,815. This amount includes direct costs of \$1,484,481 and \$146,334 in costs allocated from the Director's Office and Central Warehousing. A summary of the MIS program budget by line item is presented in Table 32.

Wages and Salaries

As shown below, there are a total of 15 new positions in the FY89 budget for the MIS program.

- System and Programming Manager
- Applications Analyst/Senior Programmer
- Operations and Technical Services Manager
- Operating Systems Programmer
- Data Communications Specialist
- Database Manager
- Database Specialist (2)
- Policy and Procedures Specialist
- Software Evaluator
- Course Developer
- Instructor (2)
- Computer Operator (2)

These positions will allow the program to meet the demands of implementing three new central information systems. The FY89 budgeted costs of these new positions is \$350,197.

Ongoing Maintenance

A total of \$180,000 is budgeted for Ongoing Maintenance of which \$175,000 is for a service contract covering all MWRA personal computers. The remaining \$5,000 is for miscellaneous cleaning fluids and specialized tools for computer repairs.

New Maintenance

The \$25,000 cost proposed in this line item is for all maintenance of the new central information systems that is not covered by manufacturer warranties.

Education, Training and Meetings

This budget line item consists of \$222,000 for personal computer training for all MWRA employees, \$10,500 for tuition reimbursement for MIS staff, and \$572 of allocated costs.

Professional Services

The budgeted costs for Professional Services only includes allocated costs of \$3,011 from the Director's Office and Central Warehousing.

Other Services

The major cost in this category is \$15,000 for copying and assembling user and training manuals. The remaining \$2,200 is for periodical subscriptions and allocated costs.

Table 32

DIVISION: ADMINISTRATIVE SUPPORT	MANAGEMENT INFORMATION SYSTEMS			
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$394,987	\$1,174,031	\$1,046,654	\$651,668 165.0%
OVERTIME:	1,966	7,129	7,033	5,067 257.7%
FRINGE BENEFITS:	24,899	100,842	98,107	73,207 294.0%
WORKERS' COMPENSATION:	0	0	0	0 N/A
CHEMICALS:	0	0	0	0 N/A
UTILITIES AND ENERGY:	0	0	0	0 N/A
ONGOING MAINTENANCE:	52,000	180,000	180,000	128,000 246.2%
NEW MAINTENANCE:	0	25,000	25,000	25,000 N/A
EDUC, TRAIN, & MEETINGS:	125,633	307,159	233,072	107,439 85.5%
PROFESSIONAL SERVICES:	10,925	63,468	3,011	(7,914) -72.4%
OTHER MATERIAL:	6,523	20,651	20,512	13,989 214.5%
OTHER SERVICES:	11,341	17,460	17,426	6,085 53.7%
PROGRAM TOTAL:	\$628,274	\$1,895,739	\$1,630,815	\$1,002,541 159.6%

Program: Administrative Services

Program Description

The staff of the Administrative Services Program plans and provides a variety of centralized support services that assist all MWRA personnel in carrying out work activities more efficiently and expeditiously. This program focuses on the specialized areas of office space and facility management; centralized administrative support; and library, information resource and records management services.

Office Space and Facility Management activities include managing the office space, building systems, furnishings, and maintenance of the MWRA's headquarters; acquiring and overseeing the construction and occupancy of additional space, and coordinating the planning and acquisition of permanent headquarters facilities.

Centralized Administrative Support staff directly provide or coordinate mail and delivery services, office supply inventory, reception area staffing, telephone system operations, copying services, and employee transportation services.

The staff of **Library Information Resource and Records Management Services** are responsible for establishing and administering a comprehensive records management system; assessing the library and information needs of MWRA staff and acquiring necessary information resources; and assisting staff members in researching, gathering, and obtaining required information.

Program Goals

- o to provide MWRA employees with work facilities that will enhance productivity and morale.
- o to develop a long-range plan for a permanent MWRA headquarters.
- o to provide complete, properly functioning administrative and support services within budgeted guidelines to assist all MWRA employees in performing their specific work assignments.
- o to meet the diverse information requirements of all MWRA employees through the development of a centralized, highly accessible, and current library, information, and records system.

Program Objectives

An increase of approximately 40% in Charlestown headquarters staff will greatly expand the demand placed on all aspects of the central administrative services program. Specific objectives for FY89 are to:

- o manage the planning and furnishing of additional space for new headquarters employees.
- o reassess maintenance activities and service agreements in order to reduce work interruptions due to building system problems.
- o provide office supplies, copying, mail, courier and transportation services for 600 headquarters staff in FY89, increased from 420 in FY88.
- o appraise and identify retention schedules for 90 percent of MWRA records series.
- o expand MWRA archives from 2 to 20 records series, including 5,000 drawings and 25,000 files, and from 10 to 15 microfilm series.
- o expand use of on-line reference and information system from 65 percent to 80 percent of capacity.

Program Budget

The FY89 budget for the Administrative Services Program is \$6,014,561, which includes direct program costs of \$5,753,345 and allocated costs of \$261,216. A summary of the budget by line item is presented in Table 33.

Wages and Salaries

There are eight new positions for this program in FY89. These positions are listed below.

Telecommunications Administrator
Administrative Services Manager
Receptionist (2)
Reproduction Clerk
Library Assistant
Records Analyst
Purchasing/Accounts Payable Administrator

The increased number of personnel at MWRA headquarters is resulting in increased demand for central administrative services. These positions will allow the Administrative Services Department to continue to provide essential support services to all centrally located personnel. The FY89 budgeted costs of these new positions is \$146,518.

Utilities

The budgeted amount of \$200,000 is the estimated cost of electricity at the headquarters facilities. This figure is based on past use for the existing office space and the estimated additional demand that will result from the new space being leased in FY89.

Ongoing Maintenance

The majority of the costs budgeted under Ongoing Maintenance are for specialized equipment services, primarily for maintenance of 18 copiers located throughout MWRA headquarters. All costs associated with this line item are listed below.

Cleaning supplies	\$ 1,000
Carpet and furniture cleaning	39,000
Building repairs	15,000
Office equipment repairs	23,500
Telephone system repairs	20,000
Copier maintenance contract	108,000
Miscellaneous equipment repairs	<u>11,500</u>
Total	\$218,000

Building repairs includes the cost of window glass replacements, and repairs to doors, furniture and kitchen facilities. Repairs of calculators, audio-visual equipment, and computer cabling is included. The list for miscellaneous equipment repairs includes service for fax machines, typewriters, mailroom and dictating/transcribing equipment, and the board room sound system.

Education, Training and Meetings

The direct costs for this line item are \$8,790, which includes \$1,800 for tuition reimbursement and \$6,990 for professional training and seminars.

Professional Services

The following two items are included in this line item: \$20,000 for a day care consultant; and \$60,000 for security services for the MWRA headquarters buildings and miscellaneous security for special events.

Other Materials

The items in this category, shown below, are basic office supplies and equipment necessary for the administrative functioning of MWRA headquarters. A detailed list of the budgeted Other Materials costs is provided below.

Office supplies	\$282,600
Postage meter	105,000
Public Affairs mailings	36,000
Library carrels and chair	1,300
Miscellaneous office set-up	17,500
Computer furniture	5,000
Work stations additions	4,000
Mail sorter	1,000
Facsimile machine	2,500
Microfilm readers	2,500
Additional shelving-records center	5,000
Vehicle expense for shuttle and couriers	15,000
Miscellaneous other materials	17,480
Allocated costs	<u>\$ 3,535</u>
Total	\$498,415

The \$17,480 budgeted for miscellaneous other materials is primarily for books and manuals for the library. Budgeted amounts for headquarters office supplies and postage were calculated based on past use per headquarters employee.

Other Services

The majority of the costs for Other Services are for MWRA office space rental and telephone bills. The budget detail for Other Services is listed on the following page.

Printing & duplicating	\$ 62,500
Microfilming	65,000
Telephone	233,000
Membership/dues/subscriptions	14,000
Rent - headquarters buildings	3,426,200
Storage	6,000
Downtown office & parking	25,500
Moving/freight/courier	56,600
Other rentals	50,400
Miscellaneous other services	48,000
Allocated costs	<u>875</u>
Total	\$3,988,075

Moving/Freight/Courier is for courier services and the cost of moving staff after the renovation of the additional office space (Building 39). Other rentals includes \$50,400 for copier rentals, beepers and other office equipment rentals. Miscellaneous Other Services includes special services required for office moves, such as computer and electrical cabling, phone additions and rearranging work stations.

Table 33

DIVISION: ADMINISTRATIVE SUPPORT	ADMINISTRATIVE SERVICES				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$520,749	\$1,002,212	\$919,182	\$398,433	76.5%
OVERTIME:	19,549	14,863	14,879	(4,670)	-23.9%
FRINGE BENEFITS:	30,460	69,265	73,334	42,874	140.8%
WORKERS' COMPENSATION:	0	0	0	0	N/A
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	150,000	186,100	200,000	50,000	33.3%
ONGOING MAINTENANCE:	86,700	235,000	218,000	131,300	151.4%
NEW MAINTENANCE:	28,550	0	0	(28,550)	-100.0%
EDUC, TRAIN, & MEETINGS:	9,487	16,993	11,007	1,520	16.0%
PROFESSIONAL SERVICES:	65,000	71,594	91,668	26,668	11.0%
OTHER MATERIAL:	408,508	528,393	498,415	89,907	22.0%
OTHER SERVICES:	2,512,436	3,947,070	3,988,075	1,475,639	58.7%
PROGRAM TOTAL:	\$3,831,440	\$6,071,489	\$6,014,561	\$2,183,121	57.0%

Program: Maintenance and Development of the Fore River
Staging Area

Program Description

The Fore River Staging Area in Quincy consists of 91 buildings, twelve parking lots, 600,000 pieces of inventory, five dry docks, one wet slip and four piers. This facility will be used for staging of Deer Island construction materials, interim sludge treatment, and possibly for the construction of pre-fabricated tunnel liners.

This program will consist of two components:

1. The security and maintenance of the Fore River Staging Facility.

The staff will repair and maintain the fire safety, electrical and roofing systems at the facility as well as perform various operations, maintenance and inspection functions. In addition, the staff will provide 24-hour security surveillance to guard against fire damage, theft and vandalism.

2. Facility engineering services for MWRA projects located at the Fore River Staging Facility.

The staff will coordinate and schedule facility planning with other MWRA divisions, monitor the performance and progress of outside contractors, and assist with engineering and construction management at the site.

Program Goals

- o to protect the Fore River Staging Facility against fire damage, theft, vandalism, and asset deterioration.
- o to prepare the site for construction staging, interim sludge treatment, and other potential uses including the construction of pre-fabricated tunnel liners.

Performance Objectives

During FY89, the staff is aiming to:

- o develop and operate a comprehensive electronic surveillance system to monitor the waterfront.
- o assist in the year-long liquidation of the facility's inventory.

- o conduct daily inspection and repairs of the fire prevention system in order to reduce the number of days the facility is without fire protection from 60 to 5.
- o restore the cathodic protection systems for the facility's piers.
- o recertify elevators at the site as needed.
- o move major cranes to more appropriate locations on the pier.
- o demolish eight buildings to clear the areas for staging and construction of new pier facilities.

In addition to these initiatives, the staff is targeting for FY89 significant improvements in the results of a number of activities initiated during FY88:

- o reduce the number of gallons of oil used each month to heat the facility from 7,000 to 5,000.
- o increase the number of capital improvements to major buildings, pipes, and transformers from 5 to 20.
- o increase the percentage of maintenance and repair projects undertaken by MWRA staff from 70 percent to 90 percent.

Program Budget

The FY89 budget for this section is \$1,243,970, which includes \$91,641 of allocated costs from the Director's Office and Central Warehousing. A summary of the budget by line item is presented in Table 34.

Wages and Salaries

A total of 16 positions were approved for this program in FY88. There are seven additional positions listed below for FY89.

- General Manager
- Facility Engineering Manager
- Maintenance/Security Manager
- Facility Engineer
- Secretary
- Electrician
- Laborer

The Facility Engineering Manager and the Facility Engineer will provide the skills needed to develop this major facility into the primary construction staging area for the MWRA's harbor cleanup efforts. The Maintenance/Security Manager will coordinate the activities of five maintenance personnel and eleven security guards. The FY89 budgeted costs of these new positions is \$205,280.

Utilities

Below is a list of the budgeted items in the Utility and Energy line item.

Fuel/Heating Oil	\$ 24,000
Natural Gas	400
Electricity	275,000
Water/Sewer	<u>88,000</u>
Total	\$ 387,400

These cost estimates were developed from energy use records provided by the previous owner of the facility together with the price projections outlined in the Budget Overview section of this document.

Ongoing Maintenance

The majority of the FY89 Ongoing Maintenance budget for the Staging area is for replacement parts for the fire protection system (\$11,000). The balance includes groundskeeping, automotive and pipeline materials, trash removal and specialized equipment services.

New Maintenance

The following items are included in the FY89 New Maintenance Budget:

Cleaning and Grounds Materials	\$ 1,000
Snow Removal	15,000
Cleaning and Grounds Services	21,000
Building Material	3,600
Electrical Maintenance and Pipe Supplies	20,000
Portable Boiler and Gasoline Trash Pump	3,500
Transformer Testing	10,000
Special Equipment Services	6,000
Card File Tub for Maintenance Program	500
Burner/Welder Services	<u>1,000</u>
Total	\$ 81,600

Other Material

The direct costs for this account are \$14,050. The large items included in this budget are office and safety supplies (\$3,900), work clothes (\$3,000) and vehicle expense (\$4,250) with the remaining money covering postage, batteries, film and flash bulbs and miscellaneous other materials.

Other Services

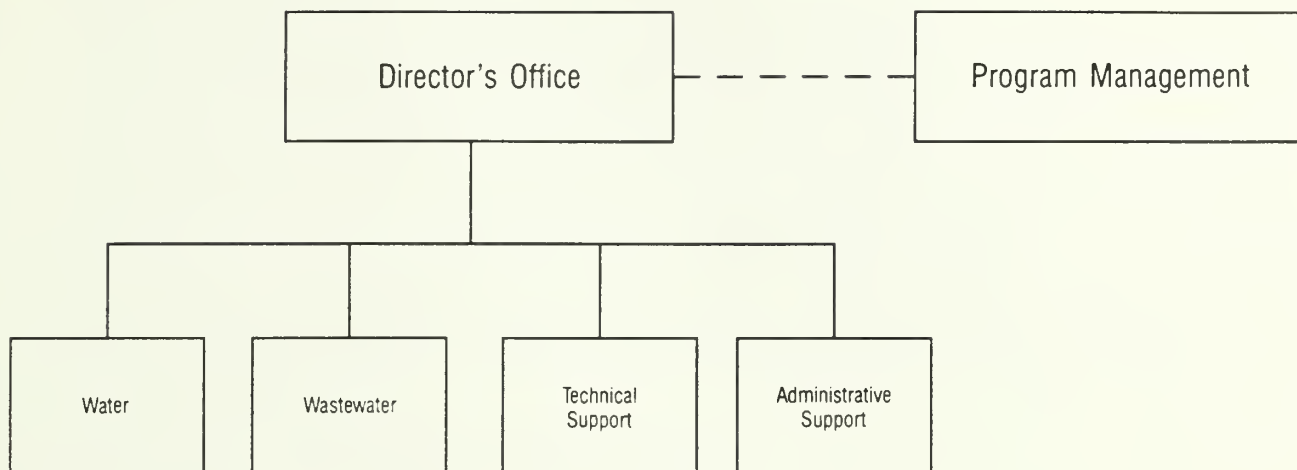
The Other Services budget of the Fore River Staging Area includes \$27,000 for rental of a boiler for the Administration Building and \$40,000 for the disposal of byproducts requiring special handling which will result from maintenance of large vehicles to be used at the Staging Area. The remaining \$6,675 budgeted in this line item is for telephone bills, membership, dues and subscriptions, lock changes and allocated costs.

Table 34

DIVISION: ADMINISTRATIVE SUPPORT	FORE RIVER STAGING AREA				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$0	\$544,132	\$587,353	\$587,353	N/A
OVERTIME:	0	415	18,492	18,492	N/A
FRINGE BENEFITS:	0	45,919	54,010	54,010	N/A
WORKERS' COMPENSATION:	0	0	0	0	N/A
CHEMICALS:	0	2,400	2,400	2,400	N/A
UTILITIES AND ENERGY:	0	341,125	387,400	387,400	N/A
ONGOING MAINTENANCE:	0	24,500	21,500	21,500	N/A
NEW MAINTENANCE:	0	47,000	81,600	81,600	N/A
EDUC, TRAIN, & MEETINGS:	0	375	444	444	N/A
PROFESSIONAL SERVICES:	0	1,973	2,337	2,337	N/A
OTHER MATERIAL:	0	22,198	14,758	14,758	N/A
OTHER SERVICES:	0	37,148	73,675	73,675	N/A
PROGRAM TOTAL:	\$0	\$1,067,184	\$1,243,970	\$1,243,970	N/A

Engineering







ENGINEERING DIVISION

Mission Statement

This Division is responsible for the planning, design, engineering and pre-construction activities of long-term improvements which will enhance the overall operation and effectiveness of the MWRA's water and sewer systems. The Wastewater Engineering program and the newly created Program Management Unit are designing major capital improvements for collection and transportation of all wastewater from MWRA communities to new primary and secondary treatment facilities on Deer Island. The Water Engineering staff is planning and designing projects that will provide for the continued, adequate supply of high quality water to MWRA user communities, without developing any new sizable water supply source.

Programs and Organizational Units

The Engineering Division is organized into four departments plus the Program Management Unit and the Division Director's Office, as shown in the chart on the facing page. The Water and Wastewater departments are each directly responsible for their respective programs, with management and additional allocated resources provided by the Director's Office and the Technical and Administrative Support departments. The newly created Program Management Unit reports directly to the Executive Director and is responsible for the major capital projects involved in the harbor cleanup. Table 35 presents a matrix that outlines the functional relationship between the Division's organizational units and programs.

Major Division Objectives

The primary objective of the Engineering Division is to plan and design new and rehabilitated facilities that will operate reliably and efficiently. For FY89 the Divisions specific objectives are listed below.

- o manage planning, design and engineering of 35 waterworks and 35 wastewater project phases.
- o complete design of five waterworks and five wastewater capital improvements.
- o complete (80%) conceptual design for major Deer Island treatment facilities.

Division Budget Summary

A \$6.0 million FY89 current expense budget is for the Engineering Division, an increase of 89 percent relative to FY88. This significant budget increase reflects the additional resources that are required to properly manage the MWRA's multi-billion dollar, long-term capital improvement program. A summary of the budgets for each of the division's programs is presented in Table 36. Budget increases are 19 percent for the Water program, 64 percent for the wastewater program. The Division also includes the newly created Program Management Unit.

The costs of the Division Director's Office, the Technical Support department and the Administrative Support department have been allocated to the water and wastewater program budgets based upon the proportion of each programs' direct costs to the total direct costs of the two programs. Fringe benefit costs, which are centralized in the Director's Office, have been allocated to three programs, including Program Management. Table 37 details all allocated costs for the Engineering Division.

On a line item basis the Division's major expense categories are labor costs, Professional Services, Other Material, and Education, Training and Meetings. Each of these cost categories is summarized below. Table 38 presents a line item summary of the Engineering Division's budget. More detailed discussions of each line item, including new positions are contained in the program budget descriptions.

Wages and Salaries

The staffing level for the Engineering Division increased from 82 to 98 with the addition of 16 positions in the program management unit in FY88. For FY89, a staffing level of 131 positions is budgeted for the Engineering Division. Existing and new positions are summarized by department in Table 39.

Professional Services

The Division's budget for Professional Services includes \$135,000 for various reviews and testing. In addition, \$200,000 is budgeted for the development of a preventive maintenance program for all MWRA facilities and infrastructure.

Education, Training and Meetings

The budget for Education, Training and Meetings includes \$17,200 for tuition reimbursement, \$52,950 for employee training and \$18,050 for meetings and conferences.

Other Materials

The FY89 budget for the Other Materials line item is \$88,933. It includes \$34,233 for mileage reimbursement, \$21,800 for surveying equipment and supplies, and \$1,450 for protective clothing. The balance of \$31,450 is distributed throughout the three programs for miscellaneous drafting and graphics supplies and equipment.

Table 35

ENGINEERING DIVISION
MATRIX OF PROGRAMS AND ORGANIZATIONAL UNITS

PROGRAM	DIRECTOR'S OFFICE	WASTEWATER	WATER	TECHNICAL SUPPORT	ADMINI- STRATIVE SUPPORT	PROGRAM MANAGEMENT
WASTEWATER	X	X		X	X	
WATER	X		X	X	X	
PROGRAM MANAGEMENT				X		X

Table 36

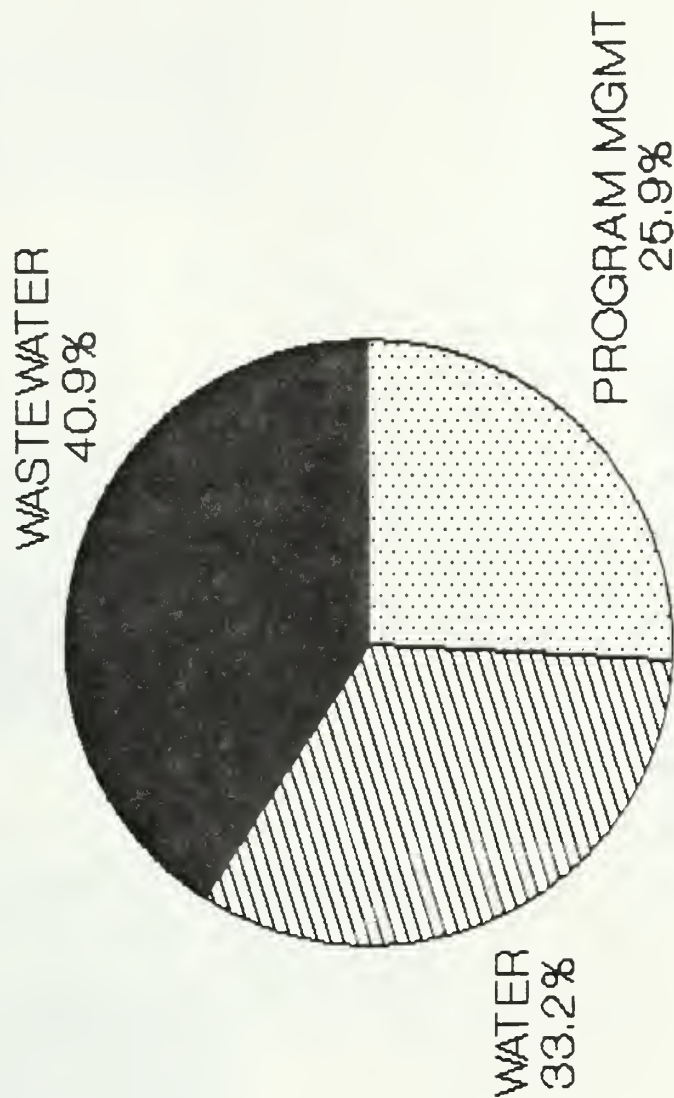
DIVISION: ENGINEERING	DIVISION SUMMARY BY PROGRAM				
	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT	%
PROGRAMS					
WASTEWATER	\$1,484,048	\$3,621,971	\$2,850,217	\$1,366,169	92.1%
WATER	\$1,661,145	\$2,121,398	\$1,923,038	261,893	15.8%
PROGRAM MANAGEMENT	\$0	\$1,556,946	\$1,495,224	1,495,224	N/A
DIVISION TOTAL:	\$3,145,193	\$7,300,315	\$6,268,479	3,123,286	99.3%

Table 37

**Engineering Division Allocated Costs
of Division Director's Office, Technical Support and
Administrative Support Departments**

Wages and Salaries	\$1,248,912
Includes funding for 7 new positions in the Administrative and Technical Support Departments. Estimated wage increases for all Division employees is also budgeted in this line item.	
Overtime	\$ 10,305
Fringe Benefits	\$ 292,459
Includes health and dental insurance for all Division employees.	
Education, Training and Meetings	
Tuition reimbursement	\$ 6,250
Training programs	14,000
Meetings	9,000
	<u>\$ 28,000</u>
Professional Services	
Preventive maintenance consultant	\$ 200,000
Outside reviews/drafting & consulting services	60,000
	<u>\$ 260,000</u>
Other Materials	
Drafting supplies/equip.	\$ 29,000
Vehicle expense	11,871
	<u>\$ 40,871</u>
Other Services	
Printing/duplicating	\$ 8,250
Telephone	540
Memberships	1,895
Moving and courier expenses	1,000
	<u>\$ 11,685</u>
Total Allocated Costs	<u><u>\$1,892,232</u></u>

ENGINEERING DIVISION PROPORTION OF CURRENT EXPENSE BUDGET BY PROGRAM IN FY89



ENGINEERING DIVISION PROGRAM BUDGET COMPARISON FY88 - FY89

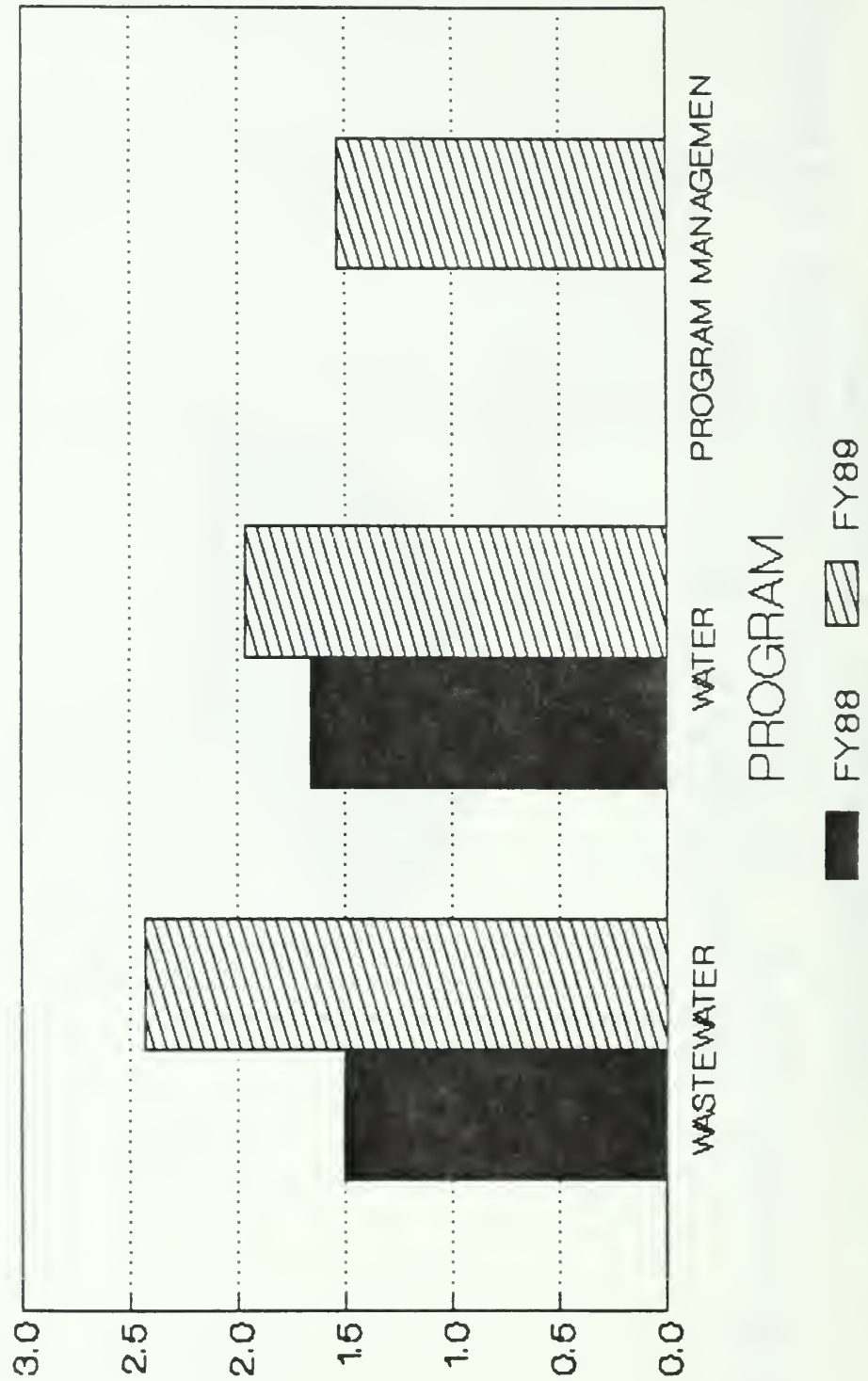


Table 38

DIVISION: ENGINEERING	PROGRAM SUMMARY BY LINE ITEM				
	1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$2,633,171	\$5,060,555	\$5,025,310	\$2,392,139	90.8%
OVERTIME:	45,034	22,007	22,653	(22,381)	-49.7%
FRINGE BENEFITS:	199,838	401,389	292,774	92,936	46.5%
WORKERS' COMPENSATION:	0	0	0	0	N/A
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	0	0	0	0	N/A
ONGOING MAINTENANCE:	0	0	0	0	N/A
NEW MAINTENANCE:	0	0	0	0	N/A
EDUC, TRAIN & MEETINGS:	57,300	91,200	88,200	30,900	53.9%
PROFESSIONAL SERVICES:	119,000	565,000	365,000	246,000	206.7%
OTHER MATERIAL:	61,940	81,933	88,933	26,993	43.6%
OTHER SERVICES:	28,910	46,395	68,360	39,450	136.5%
DIVISION TOTAL:	\$3,145,193	\$6,268,479	\$5,951,230	\$2,806,036	89.2%

ENGINEERING DIVISION SUMMARY OF DIRECT EXPENSES FY88 - FY89 COMPARISON

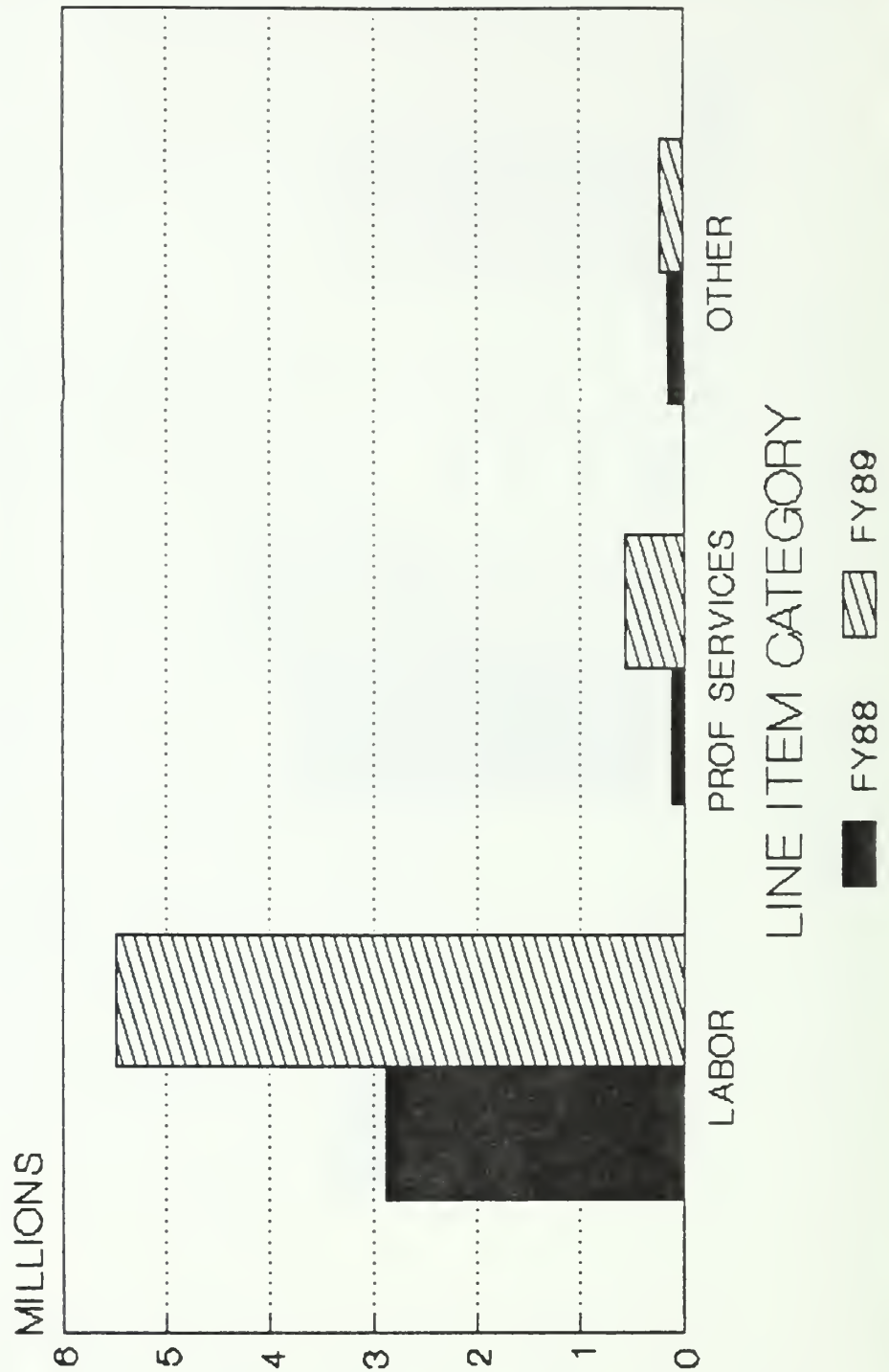


Table 39

MASSACHUSETTS WATER RESOURCES AUTHORITY
 FY89 CURRENT EXPENSE BUDGET
 PLANNED STAFFING LEVELS BY COST CENTER

ENGINEERING DIVISION

DEPARTMENT/COST CENTER	POSITIONS IN FY88 BUDGET	POSITIONS TRANSFERRED IN FY88	POSITIONS TRANSFERRED TO FY89	POSITIONS ADDED IN FY88	PLANNED POSITIONS 6/30/88	POSITIONS TO BE FILLED IN FY89	PROPOSED ATTRITIONS	PLANNED POSITIONS 6/30/89
DIRECTOR'S OFFICE	4	-1	-1	-	2	1	-	3
WATER	26	-	-1	-	25	2	-	27
WASTEWATER	28	1	-3	-	26	17	-	43
TECHNICAL SUPPORT	12	-	-	-	12	6	-	18
ADMINISTRATIVE SUPPORT	12	-	-1	-	11	2	-	13
PROGRAM MANAGEMENT	-	-	-	16	16	11	-	27
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DIVISION TOTAL	82	0	-6	16	92	39	0	131
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Program: Wastewater Engineering

Program Description

The Wastewater Engineering Program includes work in four areas: treatment, combined sewer overflow, residual management, and transport, that will significantly improve the performance of the MWRA's wastewater transport and treatment systems.

The **Treatment** subprogram includes the design of all improvements to the existing Deer Island and Nut Island treatment plants. In addition, the Treatment program will provide staff support to the Program Management Unit for the design of a primary and secondary treatment plant at Deer Island and the cross-harbor conduit and ocean outfall.

The second program category involves implementing and monitoring the MWRA's **Combined Sewer Overflow** program. The first step is the development of a CSO Facilities Plan. That effort will consist of data collection, identification and evaluation of alternatives, and recommendation of capital improvements and operating procedures. The plan will initially address short-term measures to control dry weather overflows and procedures to optimize operation of the current systems. Long term planning will include the analysis of capital improvements that will permit complete treatment of all combined sewer overflows.

Under the **Residuals Management** effort, the staff will conduct and coordinate planning, environmental review, and design activities associated with the development and implementation of various MWRA wastewater residuals management and disposal projects. Residuals are by-products of the sewage treatment process. The planning efforts include assessment of the quantity and quality of sludge from the Deer Island and Nut Island plants, a survey of available sludge-processing technologies, screening of potential disposal sites, and selection of optimum facilities and sites. Design and construction will include both on-island and mainland facilities.

Staff working on the **Transport** subprogram are responsible for the facilities planning, environmental review, design, and construction contract award of all wastewater transport capital projects. These projects include the Wellesley and Framingham Extension Relief Sewer, Quincy Pump Facilities, New Neponset Valley Relief Sewer, Sewer System Meter Program, Interceptor

Master Plan and Sewer System Evaluation, Deer and Nut Island Piers and Braintree-Weymouth Relief Facilities.

A full description of all MWRA capital projects is contained in the Authority's Capital Improvement Program.

Program Goals

- o to reduce the pollution of Boston Harbor by designing more efficient and reliable wastewater treatment facilities and by disposing of wastewater residuals in a more environmentally sound manner.
- o to design wastewater system improvements that will ensure the efficient and reliable transport of all sewage from user communities to MWRA treatment facilities and to eliminate existing overflow problems.

Performance Objectives

In FY88, the Wastewater Engineering program is managing facilities planning and design of 27 capital project phases totaling \$5.8 million in consultant services. For FY89, the following objectives have been outlined:

- o manage on-going design and engineering of 35 wastewater project phases. (See Table 40 for complete list).
- o complete design of seven priority projects in FY89.
- o assist the program management unit in design of the new Deer Island treatment facility, cross-harbor conduit and ocean outfall.
- o reduce the average budget variance on design contracts from 25 percent to 20 percent.
- o reduce the average schedule variance on all design projects from 20 percent to 15 percent.
- o reduce the average variance between engineering cost estimates and construction bids from 25 percent to 20 percent.

Program Budget

A total FY89 budget of \$2.4 million has been approved for the Wastewater Engineering program. This amount includes \$1.5 million of direct costs and \$.9 million in allocated costs of the Division Director's Office, Technical Support

and Administrative Support. Approximately 93 percent of the cost of this program is for Wages and Salaries; Education, Training and Meetings and Professional Services. A summary of the budget by line item is presented in Table 41.

Wages and Salaries

The FY89 budget includes 14 new positions for the Wastewater Engineering Department. In addition, seven new positions are for the Technical Support and Administrative Support Departments that will provide critical assistance to this program. The 14 positions for the Wastewater Department are listed below.

Wastewater

- Program Manager - treatment
- Project Manager (3) - treatment
- Project Engineer - residuals
- Project Engineer - transport
- Staff Engineer - residuals
- Project Engineer - CSO's
- Project Manager
- Secretary II (2)
- Secretary III
- Program Manager - Infiltration and Inflow
- Project Manager - Infiltration and Inflow

These new positions will enable the Wastewater Program staff to plan and design an expanded capital program in the priority areas of treatment, CSO's, residuals and infiltration and inflow reduction. The FY89 cost of these positions is budgeted at \$394,693.

Education, Training and Meetings

The budget for the Wastewater Engineering Program provides \$34,160 for Education, Training and Meetings.

Professional Services

The budget for Professional Services includes \$30,000 for specialized technical services required for independent review of designs. There is also a significant allocation in this line item for specialized air quality, borings, asbestos and PCB testing. Partial costs of the preventive maintenance study are also included in the costs allocated from the Division Director's office.

Table 40

FY89 WASTEWATER ENGINEERING CAPITAL ONGOING PROJECTS	# OF PHASES
BRAINTREE-WEYMOUTH RELIEF FACILITIES*	4
CHARLESTOWN PUMP STATION	2
CSO FACILITIES PLAN	2
D.I. INTERMEDIATE UPGRADE	3
D.I. SEWER SYSTEM EVALUATION AND REHAB	1
EAST BOSTON PUMP FACILITIES REPLACEMENT AND REHAB*	1
INTERCEPTOR SYSTEM MASTER PLAN	1
INTERIM SCUM	2
NEW NEPONSET VALLEY RELIEF SEWER*	2
QUINCY PUMP FACILITIES*	2
RESIDUALS MANAGEMENT*	3
SEWERAGE SYSTEM METERING*	1
WATER TRANSPORTATION FACILITIES	1
BREMAN STREET SIPHON	1
WELLESLEY EXTENSION	1
FRAMINGHAM EXTENSION RELIEF	2
HINGHAM PUMP STATION	1
NUT ISLAND INTERMEDIATE UPGRADE	3
ALEWIFE BROOK PARKWAY	1
SEPTAGE MANAGEMENT	1
TOTAL NUMBER OF PHASES:	35
*PHASE TO BE COMPLETED IN FY89	

Table 41

DIVISION: ENGINEERING	WASTEWATER				
EXPENSE LINE ITEM:	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT	%
WAGES AND SALARIES:	\$1,279,525	\$2,066,937	\$2,044,961	\$765,436	59.8%
OVERTIME:	\$26,280	\$7,843	\$7,843	(18,437)	-70.2%
FRINGE BENEFITS:	82,118	164,491	120,016	37,899	46.2%
WORKERS' COMPENSATION:	0	0	0	0	N/A
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	0	0	0	0	N/A
ONGOING MAINTENANCE:	0	0	0	0	N/A
NEW MAINTENANCE:	0	0	0	0	N/A
EDUC, TRAIN & MEETINGS:	26,158	35,100	34,160	8,002	30.6%
PROFESSIONAL SERVICES:	23,500	259,750	182,200	158,700	675.3%
OTHER MATERIAL:	27,497	33,188	32,453	4,956	18.0%
OTHER SERVICES:	7,058	13,804	13,804	6,746	95.6%
PROGRAM TOTAL:	\$1,472,136	\$2,581,113	\$2,435,437	\$963,302	65.4%

Program: Water Engineering

Program Description

Continuing to deliver a sufficient supply of potable water to its 46 user communities is a primary responsibility of the Massachusetts Water Resources Authority. The Water Engineering staff plans, designs and manages preconstruction activities for capital projects designed to improve the MWRA's aging water systems. The Water Engineering Program focuses on the rehabilitation and upgrading of water transmission, distribution, pumping, and treatment facilities; and on planning to meet short-term and long-range water supply requirements. The MWRA's waterworks capital projects are described in detail in the Authority's Capital Improvement Program.

The Water Engineering staff coordinates the implementation of a Long-Range Water Supply (LRWS) Program, which is designed to provide good system management to conserve present supplies through such activities as demand management, incremental supply enhancement and planning. Specific activities include water conservation programs, leak detection and repair, improved metering, more efficient use of existing sources and the development of a water system database and trigger planning capability.

In focusing on water supply planning for the MWRA, the staff coordinates its activities with other divisions and utilizes data collected by the Waterworks Division, communities, and various federal and state agencies. Other staff functions include offering advice and assistance on MWRA policy development and regulatory compliance for water engineering projects, coordinating interagency communications on water issues, producing a final report as required by the Massachusetts Environmental Policy Act on Phase II of the LRWS study, and developing a geographic information system for use in planning activities.

In addition, program staff plan, design, and manage the preconstruction activities associated with facilities that transport water from the source of supply to metered connections of community water systems. These facilities include aqueducts, tunnels, treatment pump stations, pipelines, valves, hydraulic control structures, distribution storage tanks, reservoirs, and metering and instrumentation devices. Two current key activities in this area include the Hultman and Weston Aqueduct Transfer project and a major aqueduct system improvement project that includes the relining of the Weston Aqueduct, the reconstruction of the Sudbury Siphon Bridge,

reactivation of the Sudbury Aqueduct, and construction of facilities to interconnect the aqueducts. The planning, design, and preconstruction activities associated with water quality, pumping station, and treatment plant projects are also undertaken by this program staff.

Program Goals

- o to meet the water supply requirements of the MWRA service area without developing major new water sources, through ongoing water supply planning, more effective demand management and incremental supply enhancement.
- o to plan and design capital improvements that will enhance the reliability and efficiency of the MWRA's waterworks system.

In undertaking these water system rehabilitation and water supply planning projects, the Water Engineering staff has formulated the following objectives for FY89:

- o manage design and engineering of a total of 35 waterworks project phases.
- o complete two initial analyses of water supply programs, compared to one in FY88.
- o undertake ten in-house studies and design projects, compared to seven in FY88.
- o complete three transmission designs compared to two in FY88.
- o complete an aqueduct study.
- o complete rehabilitation designs of three water pumping facilities.
- o reduce the schedule and budget variance on major projects from 25 percent to 15 percent.
- o reduce variances between the original engineering estimates and construction bids from 25 percent in FY88 to 15 percent in FY89.

Program Budget

A total of \$2.0 million is budgeted for the Water Engineering program for FY89. This amount includes \$1.1 million in direct costs and \$.9 million in allocated costs of the

Division Director's Office, Technical Support and Administrative Support. A summary of the budget by line item is presented in Table 43.

Wages and Salaries

The FY89 budget includes one new staff engineer position exclusively for the Water Engineering Program. This new position will provide additional staff support for projects related to the water quality and structures Program. In addition, six new positions have been approved for the Technical Support Department that will provide the Water Engineering program with assistance in specific engineering specialties such as, mechanical, electrical and computer aided design.

Professional Services

The budget for Professional Services includes \$10,000 for consulting services for the Swift River Release, short range water supply and stream gauging studies. An additional \$5,000 is included for the analysis of local water supply options to increase the water available to the MWRA. The remaining allocated costs for this line item are listed in Table 37 and described in the division budget summary.

Other Materials

The budget for Other Materials in the Water Engineering program is \$31,430. The major item in this category is mileage expense.

Table 42

FY89 WATER ENGINEERING CAPITAL ONGOING PROJECTS	* OF PHASES
AQUEDUCT SYSTEM IMPROVEMENTS	3
ADDITIONAL WATER SUPPLY PROPOSALS	1
COMMONWEALTH AVE. PUMP STATION MODERNIZATION	1
DUDLEY ROAD PUMP STATION REHABILITATION*	1
HULTMAN-WESTON AQUEDUCT TRANSFER	2
LEXINGTON STREET PUMP STATION REHABILITATION*	1
LONG RANGE WATER SUPPLY	1
NO. HIGH SERVICE REVERE & MALDEN PIPELINE IMPROVEMENT	1
NO. HIGH SERVICE - LYNN	1
NO. LOW SERVICE - MEDFORD PIPELINE IMPROVEMENT	1
ORIENT HEIGHTS BOOSTER PUMP STATION	2
SAFE DRINKING WATER IMPACT	2
SPOT POND PUMP STATION REHABILITATION*	1
SUDBURY RESERVOIR TREATMENT PLANT	2
TRANSMISSION MAINTENANCE FACILITY	1
WACHUSETT RESERVOIR BY-PASS TUNNEL	1
WARD STREET PUMP STATION REHABILITATION	1
WATER DISTRIBUTION SYSTEM MASTER PLAN	2
WESTON RESERVOIR CHLORINATION FACILITY	1
WINSOR DAM HYDROGENERATOR	1
SOUTHERN SERVICE IMPROVEMENTS	4
REHABILITATION OF EXISTING FACILITIES	3
BOSTON LOW SERVICE PIPE REHAB	1
TOTAL NUMBER OF PHASES:	35
*PHASE TO BE COMPLETED IN FY89	

Table 43

DIVISION: ENGINEERING	WATER			
	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$1,353,646	\$1,723,376	\$1,631,671	\$278,025 20.5%
OVERTIME:	\$18,754	\$8,462	\$8,462	(10,292) -54.9%
FRINGE BENEFITS:	66,098	132,593	96,796	30,698 46.4%
WORKERS' COMPENSATION:	0	0	0	0 N/A
CHEMICALS:	0	0	0	0 N/A
UTILITIES AND ENERGY:	0	0	0	0 N/A
ONGOING MAINTENANCE:	0	0	0	0 N/A
NEW MAINTENANCE:	0	0	0	0 N/A
EDUC, TRAIN & MEETINGS:	31,142	31,900	29,840	(1,302) -4.2%
PROFESSIONAL SERVICES:	95,500	240,250	152,800	57,300 60.0%
OTHER MATERIAL:	34,443	32,195	31,430	(3,013) -8.7%
OTHER SERVICES:	21,852	23,281	23,281	1,429 6.5%
PROGRAM TOTAL:	\$1,621,435	\$2,192,057	\$1,974,280	\$352,845 21.8%

Program: Program Management

Program Description

To manage the complex Boston Harbor Cleanup, the MWRA established a full-time, in-house Program Management Unit (PMU), to provide direction and management for the capital construction program. The Deer Island related components of the Boston Harbor Cleanup Program managed by the PMU includes the following major construction projects:

- o A primary treatment facility capable of handling slightly more than one billion gallons of wastewater per day.
- o A secondary treatment facility capable of handling a similar amount of wastewater.
- o An inter-island hard rock tunnel to convey wastewater a distance of five miles from Nut Island at Quincy to Deer Island.
- o Off-island staging and storage facilities to support the construction and facilities operation on Deer Island.
- o Early site preparation activities including the moving of excavated soils to construct landforms and moving existing structures in preparation of major contracts.
- o Construction of headworks at Nut Island.
- o On-shore and on-island piers and the associated water transportation systems to serve construction and operations.
- o A new plant outfall tunnel for the discharge of treatment facilities effluent extending from 8 to 9 miles from Deer Island out to sea.
- o Residual management facilities on Deer Island.

When completed, the Deer Island-related facilities will constitute one of the largest and most complex wastewater treatment facilities in the nation. The entire project will involve 25-40 multi-million dollar contracts, many of which will require numerous subcontracts. The PMU will be assisted by two consultant teams a Program/Construction Manager (P/CM) and a Lead Design Engineer (LDE). This management

concept has proven very effective in many similar construction projects throughout the country. Advantages of using the P/CM approach include the P/CM's assumption of day-to-day responsibility for properly scheduling work to avoid delay, properly scheduling material and equipment for on-time delivery, and identifying physical and logistical obstacles to be anticipated and accommodated. The PMU will also draw on resources from the MWRA Engineering and Construction Divisions to assist in the management of the Deer Island program.

The PMU will be responsible for transmitting the MWRA's objectives to the P/CM, monitoring the P/CM's performance and serving as a liaison between the other MWRA divisions and the P/CM. The Program Management Unit will provide the coordination required. The Authority will retain the right to issue bid packages, select consultants and contractors, authorize change orders and progress payments, and issue completion certificates. In order to most effectively manage the P/CM, the PMU's organizational structure has been designed to mirror that of the P/CM.

The PMU structure seeks to avoid redundancy with other Authority organizational units. For example, procurement will still be performed by the procurement department, with the PMU procurement specialist keeping the procurement personnel informed of the PMU's needs and priorities. During the design phase of each project, project managers will be assigned from the Engineering Division to support the PMU management team. Once the projects are ready for construction, an engineer from the Construction Division will be assigned to each project as project manager for overall program management. This joint approach avoids redundancy in resources and simultaneously strengthens the management skills of Engineering and Construction Division personnel.

The P/CM will assume primary responsibility for day-to-day program management including oversight of design and supervision of cost estimating, program coordination and scheduling, community relations, permitting, water transportation, bulk materials handling, value engineering, prepurchase of equipment and materials, resident engineering, facility testing and staff training. In addition, the P/CM will provide technical support for agency decisions regarding contractor selection, change order control, progress payments and final acceptance. Kaiser Engineers was selected to provide P/CM services for the initial contract period (April 1988-June 1991).

The Lead Design Engineer (LDE) will assume responsibility for directing the design of the primary and secondary treatment facilities including the tunnels and on-site residuals management facilities. The LDE will develop design standards, provide drawings and outline specifications at 15-20 percent completion level for all facilities, prepare a final decision of those facilities requiring early completion, and oversee selected designers for other design packages. The work of the LDE will be managed from an overall program perspective by the P/CM with particular emphasis on schedule, budget, constructability and operability issues. Metcalf and Eddy has been selected as the LDE and will assume its responsibilities in August. The initial contract term will extend through June 1992.

Performance Objectives

- 1) Determine basic construction support system for Deer Island by the close of FY89.
- 2) Partially complete site preparation activities by the end of FY89.
- 3) Completion of the conceptual design (15-20%) of the Deer Island Secondary facilities by June 1989.
- 4) Develop and conduct aggressive Project Promotion and Public Relations Program geared towards community involvement and education.
- 5) Development of cost estimating methodology defining estimating procedures, inflation, contingency and updating assumptions; submission of report by September 1988.

Development of computerized data base enabling sensitivity analysis capability, and capturing of information in a variety of formats by August 1988.

- 6) Development of a master schedule detailing schedule requirements, critical engineering and construction milestones, lead requirements of equipment and materials, court deadlines, and key activities by other agencies; linkage of the Master Schedule to MIS database in order that changes automatically trigger an update; to be submitted by November 1988.
- 7) Assessment of current and projected worker needs by June 1989.
- 8) Complete 50% of the Inter-island and effluent outfall tunnel designs.
- 9) Complete design of effluent outfall shaft.
- 10) Procurement and installation of CAD system by January 1989, enabling design team to create designs from any area of the country.

Program Budget

A total of \$1.5 million in direct costs is budgeted for the newly created Program Management Unit for FY89. A summary of the budget by line item is presented in Table 44.

Wages and Salaries

The PMU is broken into three major components: construction engineering, and coordination and control. Each component has a deputy director and each deputy director has a staff. The three components of PMU include engineers, construction personnel, contract administrators, financial and inter-governmental coordinators and a community relations specialist. These personnel manage the program activities and consultants and serve as liaisons with other divisions and units within the Authority.

During FY88, the MWRA Board of Directors approved the creation of the Program Management Unit which initially included 16 new positions. This budget includes funding for eleven additional program management positions in FY89. These eleven positions are listed below.

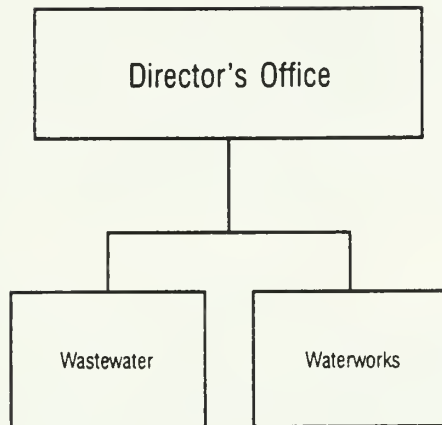
- Deputy Director Construction Services
- Secretary I (2)
- Program Scheduler
- Construction Manager
- Operations Specialist
- Claims Management Specialist
- Procurement Specialist
- Senior Contract Administrator
- Grants Administrator
- Sr. Construction Manager

Table 44

DIVISION: ENGINEERING	PROGRAM MANAGEMENT			
	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$0	\$1,270,242	\$1,348,678	\$1,348,678 N/A
OVERTIME:	\$0	\$5,702	\$6,348	6,348 N/A
FRINGE BENEFITS:	51,623	104,305	75,961	24,339 N/A
WORKERS' COMPENSATION:	0	0	0	0 N/A
CHEMICALS:	0	0	0	0 N/A
UTILITIES AND ENERGY:	0	0	0	0 N/A
ONGOING MAINTENANCE:	0	0	0	0 N/A
NEW MAINTENANCE:	0	0	0	0 N/A
EDUC, TRAIN & MEETINGS:	0	24,200	24,200	24,200 N/A
PROFESSIONAL SERVICES:	0	65,000	30,000	30,000 N/A
OTHER MATERIAL:	0	16,550	25,050	25,050 N/A
OTHER SERVICES:	0	9,310	31,275	31,275 N/A
PROGRAM TOTAL:	\$51,623	\$1,495,309	\$1,541,512	\$1,489,890 N/A

Construction







CONSTRUCTION DIVISION

Mission Statement

The timely and cost-effective construction of MWRA water and wastewater facilities is the primary responsibility of the Construction Division. The staff manages the new construction and rehabilitation of wastewater collection, transport, pumping, and treatment facilities as well as water treatment, transmission, distribution and pumping facilities. It is responsible for quality control of the MWRA's construction activities.

Program and Organizational Units

The Construction Division is organized into three departments, as shown in the chart on the facing page. The Waterworks and Wastewater departments each manage a program, which relies on additional allocated resources and direction from the Director's Office. The two programs of the Construction Division are listed below.

Waterworks Construction
Wastewater Construction

Table 45 presents a matrix that outlines the functional relationship between the Division's organizational units and programs.

Major Division Objectives

The Construction Division's major goal is to successfully meet an expanded capital construction schedule in both the Water and Wastewater program areas. The Division intends to manage 74 construction phases in FY89.

The Current Expense Budget provides increased resources to ensure the efficiency and effectiveness of the Division's two programs. The overall objectives of these programs in FY89 are as follows:

- o reduce budget variances on MWRA construction projects to within 3-5% of the original contract amount.
- o eliminate avoidable schedule variances on all MWRA construction projects.

Division Budget Summary

A \$2.9 million FY89 current expense budget has been approved the Construction Division, an increase of 14 percent from FY88. A summary of the budget for each of the division's programs is presented in Table 46. Budget increases are 23 percent for the Wastewater program and decrease 3 percent for the Waterworks program.

The costs of the Division Director's Office are allocated to the Water and Wastewater program budgets based upon the proportion of each program's direct costs to the total direct costs of the two programs. All allocated costs of the Director's Office are listed in Table 47.

On a line item basis, the Division's major expense categories are Labor Costs; Education, Training and Meetings; Other Materials, and Other Services. Each of these categories is summarized below. More detailed discussion of each line item, including new positions, is contained in the program budget descriptions. A line item summary of the Construction Division's budget is presented in Table 48.

Wages and Salaries

The budgeted staffing level for the Construction Division to increases from 55 in FY88 to 70 in FY89. This 28 percent increase is necessary to accommodate an increase in the magnitude of construction projects planned for FY89. Existing and new positions are summarized by department in Table 49.

Education, Training and Meetings

The budget for Education, Training and Meetings includes \$3,150 for tuition reimbursement and \$11,525 for training and conferences.

Other Materials

The FY89 budget for Other Materials is \$88,533, which includes \$20,455 for office supplies and equipment, \$23,903 for first aid equipment and protective clothing, \$40,000 for vehicle mileage expenses and \$2,675 for reference materials. The balance of \$1,500 is for miscellaneous items.

Other Services

The other services line item has a total budget of \$37,700. The cost of field offices for the Construction Division is budgeted at \$13,500. Equipment and moving expenses for these offices is budgeted at \$3,000 and \$3,700 respectively. This line item also includes \$6,000 for document reproduction; \$3,000 for communication devices, such as car phones and beepers and their maintenance costs; \$5,000 for memberships, dues and subscriptions; \$1,000 for courier services and \$2,500 for commissary items.

Table 45

CONSTRUCTION DIVISION
MATRIX OF PROGRAM AND ORGANIZATIONAL UNITS

PROGRAM	DIRECTOR'S OFFICE	WASTEWATER	WATER
WASTEWATER	X	X	
WATER	Y		X

Table 46

DIVISION: CONSTRUCTION	DIVISION SUMMARY BY PROGRAM			
	1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT %
PROGRAMS				
WATER	\$1,103,912	\$1,247,557	\$1,131,372	\$27,460 2.5%
WASTEWATER	\$1,424,940	\$1,879,698	\$1,746,335	321,395 22.6%
DIVISION TOTAL:	\$2,528,853	\$3,127,254	\$2,877,707	348,854 13.8%

Table 47

**Construction Division Allocated Costs
of Division Director's Office**

Wages and Salaries \$314,528

This includes all existing positions of the Director's Office and estimated wage increases for all Division employees.

Overtime \$ 2,000

Fringe Benefits \$206,023

Includes health and dental insurance for all Division employees.

Workers' Compensation \$ 32,000

Ongoing Maintenance
 Special Equipment Services \$ 1,000

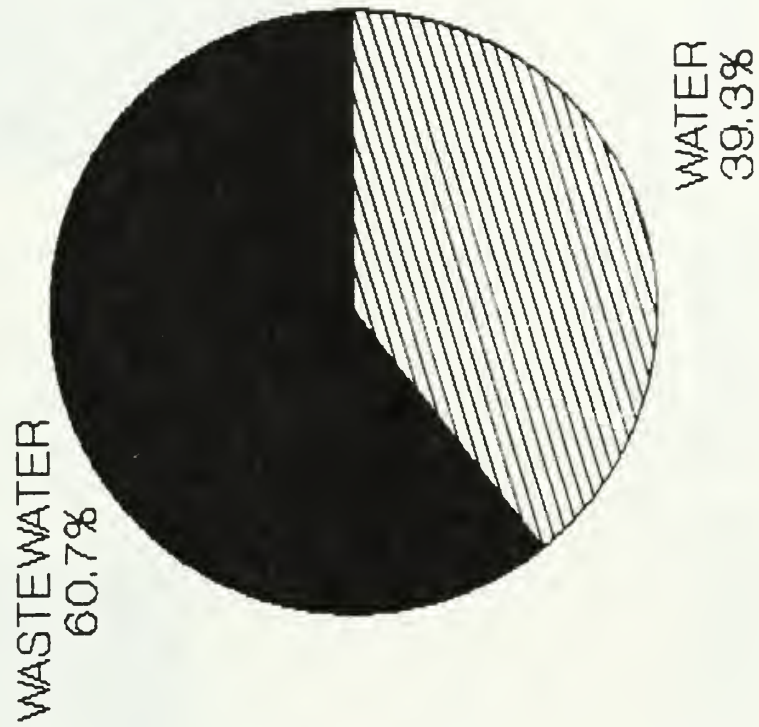
Education, Training and Meetings
 Tuition reimbursement \$ 750
 Training programs and other meetings 1,250
 \$ 2,000

Other Materials
 Typewriters, calculators, pagers \$ 5,330
 Safety clothing 1,600
 Vehicle expense 4,000
 Reference materials 2,675
 \$ 13,605

Other Services
 Drawing and document reproductions \$ 5,000
 Beepers, car phones 1,000
 Memberships, dues, subscriptions 1,500
 Miscellaneous other services 3,500
 \$ 11,000

Total Allocated Costs \$582,156

CONSTRUCTION DIVISION PROPORTION OF CURRENT EXPENSE BUDGET BY PROGRAM IN FY89



CONSTRUCTION DIVISION PROGRAM BUDGET COMPARISON FY88 - FY89

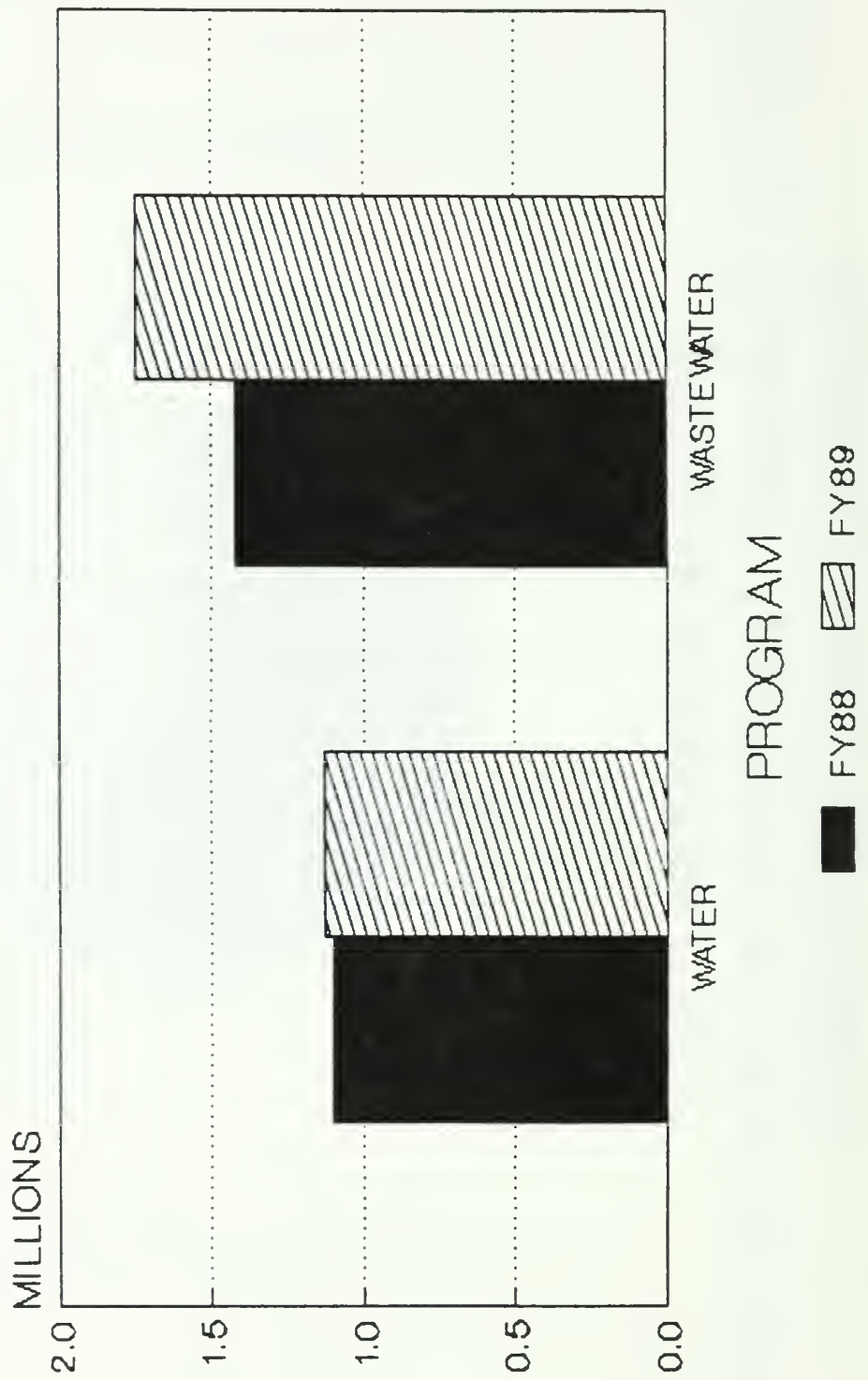


Table 48

DIVISION: CONSTRUCTION	PROGRAM SUMMARY BY LINE ITEM			
	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$1,866,981	\$2,628,241	\$2,446,327	\$579,346 31.0%
OVERTIME:	30,364	40,000	40,000	9,636 31.7%
FRINGE BENEFITS:	180,133	221,276	209,122	28,990 16.1%
WORKERS' COMPENSATION:	0	0	32,000	32,000 N/A
CHEMICALS:	0	0	0	0 N/A
UTILITIES AND ENERGY:	2,350	2,350	2,350	0 0.0%
ONGOING MAINTENANCE:	10,000	10,000	1,000	(9,000) -90.0%
NEW MAINTENANCE:	2,000	4,000	4,000	2,000 100.0%
EDUC, TRAIN & MEETINGS:	31,150	34,675	14,675	(16,475) -52.9%
PROFESSIONAL SERVICES:	205,000	7,000	2,000	(203,000) -99.0%
OTHER MATERIAL:	143,925	128,513	88,533	(55,392) -38.5%
OTHER SERVICES:	56,950	51,200	37,700	(19,250) -33.8%
DIVISION TOTAL:	\$2,528,853	\$3,127,254	\$2,877,707	\$348,854 13.8%

CONSTRUCTION DIVISION SUMMARY OF DIRECT EXPENSES FY88 - FY89 COMPARISON

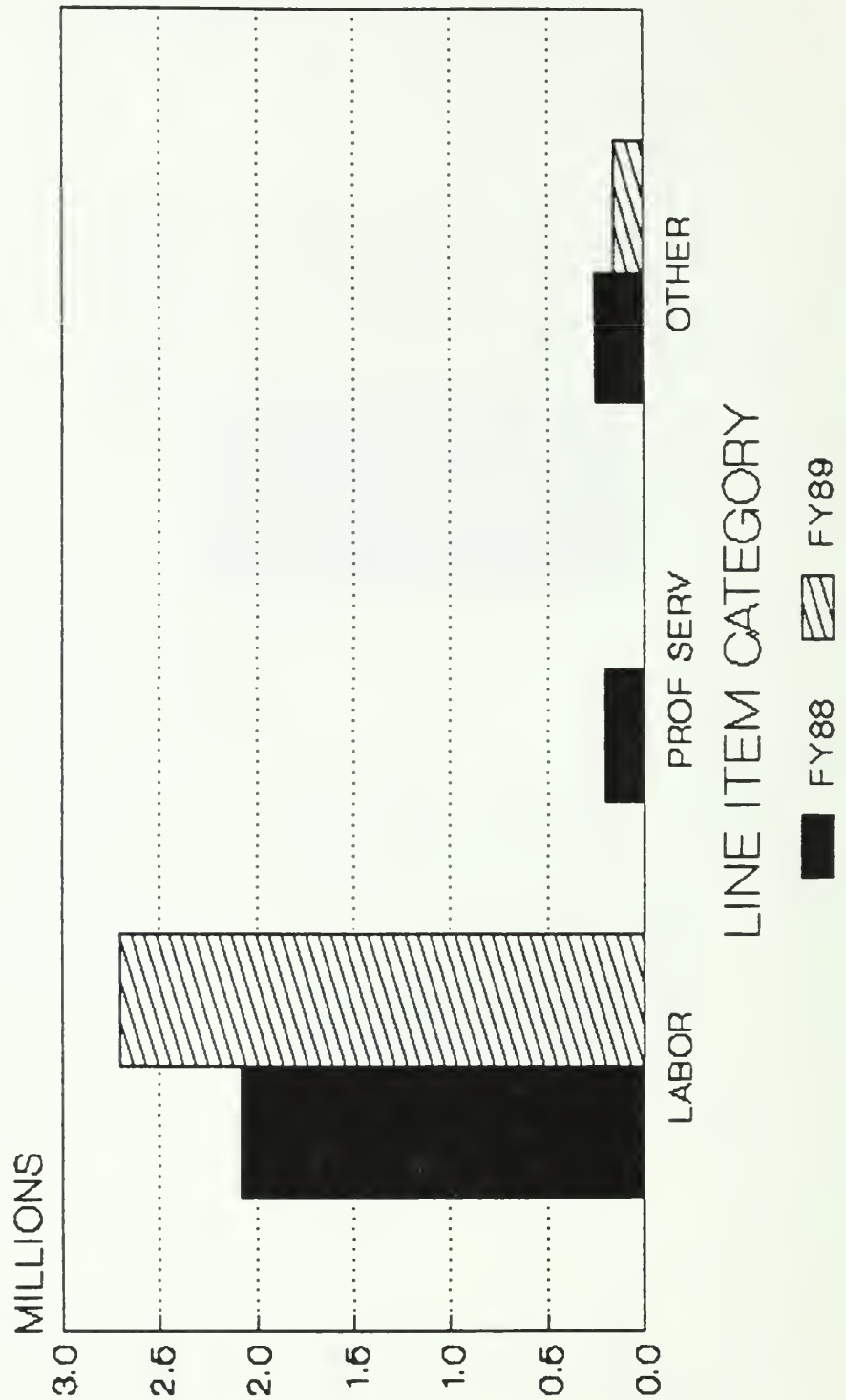


Table 49

MASSACHUSETTS WATER RESOURCES AUTHORITY
 FY89 CURRENT EXPENSE BUDGET
 PLANNED STAFFING LEVELS BY COST CENTER

CONSTRUCTION DIVISION

DEPARTMENT/COST CENTER	POSITIONS IN FY88 BUDGET	POSITIONS TRANSFERRED IN FY88	POSITIONS TRANSFERRED TO FY89	POSITIONS ADDED IN FY88	PLANNED POSITIONS 6/30/88	POSITIONS TO BE FILLED IN FY89	PROPOSED ATTRITIONS	PLANNED POSITIONS 6/30/89
DIRECTOR'S OFFICE	10	(1)	-	-	9	-	-	9
WASTEWATER	26	3	-	-	29	9	-	38
WATER	20	(3)	-	-	17	6	-	23
	-----	-----	-----	-----	-----	-----	-----	-----
DIVISION TOTAL	56	-1	0	0	55	15	0	70
	=====	=====	=====	=====	=====	=====	=====	=====

Program: Wastewater Construction

Program Description

The Wastewater Construction staff oversees and monitors the construction or major rehabilitation of all MWRA wastewater treatment, transport and pumping facilities. Completing these wastewater capital improvements on schedule, within budget and with a high degree of quality control are the essential responsibilities of this program.

In FY89 there will be a significant expansion in the MWRA's construction activity. Several major sewer line projects will move into the construction phase. In addition, key portions of the ongoing improvements to Deer Island will be constructed in FY89. Major projects include the Wellesley Extension Relief Sewer, East Boston Pump Facilities, Deer Island Intermediate Upgrade, Deer Island Pier Facilities, Clinton Treatment Plant, and Commercial Point and Fox Point CSO's. Table 47 provides a list of all wastewater construction projects planned for FY89. More detailed descriptions of these projects, including costs and construction schedules can be found in the MWRA's FY88-90 Capital Improvement Program.

Program Goals

- o to ensure the timely, cost-effective construction of wastewater collection, pumping, and treatment projects which:
 - improve service to MWRA communities;
 - improve the water quality of Boston Harbor;
 - enhance the overall operation of the MWRA's sewer system.

Performance Objectives

In FY88 the Wastewater Construction program is managing 37 construction project phases totaling \$27 million. For FY89 the following objectives have been outlined:

- o manage construction work on 50 wastewater project phases (see Table 50 for complete list).
- o complete construction of eight priority wastewater capital project(s).

- o reduce budget variances on new construction projects to within 3% of the original contract amount.
- o reduce budget variances on rehabilitation projects to within 5% of the original contract amount.
- o complete all construction projects according to the construction contract schedules.

Program Budget

A total FY89 budget of \$1.75 million has been approved for the Wastewater Construction program. This amount includes \$1.39 million in direct costs and \$.36 million in allocated costs of the Division Director's Office. Wages and Salaries, Other Materials and Other Services comprise over 90 percent of the total budget of this program. A summary of the budget by line item is presented in Table 51.

Wages and Salaries

The FY89 budget includes \$182,033 for nine new positions in the Wastewater program. These positions are as follows:

Assistant Civil Engineer (6)
Senior Civil Engineer (3)

The Wastewater program's workload of ongoing project phases will increase from 37 in FY88 to 50 in FY89. The new positions are integral to the program's ability to meet the expanded schedule of construction activities.

Other Materials

The two major expenses in the Other Materials line item for this program are protective clothing and first aid items, and mileage costs for employee-owned and MWRA-owned vehicles. Protective clothing and first aid costs are estimated at \$13,303 and mileage reimbursement at \$18,000. The balance of \$9,500 is for miscellaneous office supplies and equipment such as calculators and typewriters and for reference materials.

Other Services

The two major items in Other Services are \$10,000 for rental of field offices and \$3,000 for field office equipment; \$2,000 for field office moving expenses; \$1,500 for memberships, dues and subscriptions; \$500 for document reproduction and \$6,160 in allocated costs.

Table 50

PROJECT #	FY89 WASTEWATER CONSTRUCTION CAPITAL ONGOING PROJECTS	# OF PHASES
2	SEWRAGE SYSTEM METERING	2
4	BRAINTREE-WEYMOUTH REHAB	1
6	WELLESLEY EXTENSION REPLACEMENT SEWER	4
8	QUINCY PUMP FACILITIES STUDY	1
9	HINGHAM PUMP STATION REHAB	1
16	EAST BOSTON PUMP FACILITIES REPLACEMENT AND REHAB	4
17	BELLE ISLE SIPHON REHAB	2
19	CHARLESTOWN PUMP STATION REPLACEMENT	3
21	D.I. PUMP AND POWER STATION UPGRADING	2
22	D.I. REMOTE HEADWORKS*	2
23	D.I. SEDIMENTATION TANK SYSTEM IMPROVEMENTS*	2
26	D.I. DUAL FUEL ENGINE/GENERATOR OVERHAUL*	1
28	D.I. CHLORINATION FACILITY REHAB*	2
31	D.I. INTERMEDIATE UPGRADE	4
33	WATER TRANSPORTATION FACILITIES	7
36	CLINTON WASTEWATER TREATMENT PLANT	4
37	INTERIM SCUM MANAGEMENT	2
42	FOX POINT CSO FACILITY*	2
43	COMMERCIAL POINT CSO FACILITY	2
46	SOMERVILLE MARGINAL CSO REHAB	2

TOTAL NUMBER OF PHASES: 50

* TO BE COMPLETED IN FY89

Table 51

DIVISION: CONSTRUCTION	WASTEWATER			
EXPENSE LINE ITEM:	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT %
WAGES AND SALARIES:	\$1,059,689	\$1,601,463	\$1,502,864	\$443,175 41.8%
OVERTIME:	22,486	24,120	24,120	1,634 7.3%
FRINGE BENEFITS:	103,973	125,510	118,983	15,010 14.4%
WORKERS' COMPENSATION:	0	0	17,920	17,920 N/A
CHEMICALS:	0	0	0	0 N/A
UTILITIES AND ENERGY:	850	850	850	0 0.0%
ONGOING MAINTENANCE:	5,000	5,000	560	(4,440) -88.8%
NEW MAINTENANCE:	2,000	2,000	2,000	0 0.0%
EDUC, TRAIN & MEETINGS:	15,812	18,360	7,457	(8,355) -52.8%
PROFESSIONAL SERVICES:	117,000	5,000	0	(117,000) -100.0%
OTHER MATERIAL:	69,929	70,342	48,422	(21,507) -30.8%
OTHER SERVICES:	28,202	27,052	23,160	(5,042) -17.9%
PROGRAM TOTAL:	\$1,424,940	\$1,879,698	\$1,746,335	\$321,395 22.6%

Program: Waterworks Construction

Program Description

The Waterworks Construction staff oversees and monitors the construction and major rehabilitation of all MWRA water transmission pipelines, distribution mains, pumping stations, and treatment facilities. Managing contractor activities to assure quality construction practices and completion of waterworks projects on schedule and within budget are the essential responsibilities of this program.

Both the number and dollar value of waterworks capital improvements under construction in FY89 will be significantly greater than in FY88. Specific projects include the Oakdale Power Station, Hultman-Weston Aqueduct Transfer, Southern Distribution System Improvements and Northern Distribution System Improvements. A list of all Waterworks Construction projects planned for FY89 is presented in Table 52. More detailed descriptions of these projects including costs and construction schedules can be found in the MWRA's FY88-90 Capital Improvement Program.

Program Goals

- o to ensure timely, cost-effective, high quality construction of a variety of water distribution, pumping, and treatment projects that will improve overall system efficiency and service to member communities.

Performance Objectives

In FY88 the Waterworks Construction program is managing 10 construction project phases totaling \$7 million in FY88 construction expenditures. For FY89 the following objectives have been outlined:

- o manage construction work on 24 waterworks project phases totaling \$12.8 million in FY89 expenditures (see Table 52).
- o complete construction of seven priority waterworks capital projects.
- o reduce budget variances on new construction projects to within 3 percent of the original contract amount.
- o reduce budget variances on rehabilitation projects to within 5 percent of the original contract amount.

- o complete all construction projects according to the construction contract schedules.

Program Budget

A total FY89 budget of \$1.1 million has been approved for the Waterworks Construction program. This amount includes \$0.9 million in direct costs and \$0.2 million in allocated costs of the Division Director's Office. Approximately 91 percent of the budget for this program is for labor costs, Other Materials and Other Services. A summary of the budget by line item is presented in Table 53.

Wages and Salaries

The FY89 budget includes \$143,062 for six new positions in the Waterworks Construction program. These positions are as follows:

- Senior Civil Engineer (3)
- Assistant Civil Engineer
- Junior Civil Engineer (2)

This program's workload of ongoing construction phases increases from 10 in FY88 to 24 in FY89. The new positions are needed to accommodate this expanded construction schedule.

Other Materials

The major item in the Other Materials line item for this program is vehicle expenses, estimated at \$18,000. Protective clothing, first aid items and workclothes will cost an estimated \$9,000. The balance of this line item is a combination of miscellaneous office supplies, equipment and reference materials and \$5,906 in allocated costs.

Other Services

A total of \$14,540 is budgeted for Other Services. This amount is 49 percent less than that included in the FY88 budget. Budgeted items include printing and duplicating, car phones and beepers and rental of field offices and equipment.

Table 52

PROJECT #	FY89 WATER CONSTRUCTION CAPITAL ONGOING PROJECTS	# OF PHASES
57	OAKDALE POWER STATION GENERATOR REPAIR	2
58	SLUICE GATE REHAB	1
59	HULTMAN-WESTON AQUEDUCT TRANSFER FOR HYDROPOWER	1
62	ECHO BRIDGE REHAB *	1
63	NORUMBEGA CHLORINATION FACILITY *	1
66	WATER METER MODERNIZATION	1
68	NOANTUM ROAD PIPE REPLACEMENT	1
70	SOUTHERN SERVICE IMPROVEMENTS	3
76	NORTHERN INTERMEDIATE HIGH SERVICE DISTRIBUTION IMPROVEMENT	2
80	NORTHERN HIGH SERVICE PIPE IMPROVEMENTS-LYNN PIPELINE	2
81	NORTHERN HIGH SERVICE-REVERE AND MALDEN PIPELINE IMPROVEMENTS	5
83	CNETRAL MONITORING SYSTEM EXPANSION	2
86	ASBESTOS ABATEMENT PROGRAM	2

TOTAL NUMBER OF PHASES: 24

* TO BE COMPLETED IN FY89

Table 53

DIVISION: CONSTRUCTION	WATER			
=====	=====	=====	=====	=====
EXPENSE LINE ITEM:	FISCAL YEAR 1988 BUDGET	1989 PROPOSED	1989 FINAL	VARIANCE BETWEEN FY88 AND FY89 AMOUNT %
=====	=====	=====	=====	=====
WAGES AND SALARIES:	\$807,293	\$1,026,778	\$943,463	\$136,170 16.9%
OVERTIME:	7,878	15,880	15,880	8,002 101.6%
FRINGE BENEFITS:	76,159	95,766	90,140	13,980 18.4%
WORKERS' COMPENSATION:	0	0	14,080	14,080 N/A
CHEMICALS:	0	0	0	0 N/A
UTILITIES AND ENERGY:	1,500	1,500	1,500	0 0.0%
ONGOING MAINTENANCE:	5,000	5,000	440	(4,560) -91.2%
NEW MAINTENANCE:	0	2,000	2,000	2,000 N/A
EDUC, TRAIN & MEETINGS:	15,338	16,315	7,218	(8,120) -52.9%
PROFESSIONAL SERVICES:	88,000	2,000	2,000	(86,000) -97.7%
OTHER MATERIAL:	73,996	58,170	40,111	(33,885) -45.8%
OTHER SERVICES:	28,748	24,148	14,540	(14,208) -49.1%
=====	=====	=====	=====	=====
PROGRAM TOTAL:	\$1,103,912	\$1,247,557	\$1,131,372	\$27,460 2.5%
=====	=====	=====	=====	=====



Sewerage

2019

Director's Office

Water
Quality

Maintenance
Engineering

Pumping

Collections

Nut
Island

Deer
Island

Clinton



SEWERAGE DIVISION

Mission Statement

The Sewerage Division is responsible for the continuous, environmentally sound collection and treatment of wastewater from the 43 cities and towns served by the Massachusetts Water Resources Authority. To perform this function, the Division operates and maintains the MWRA's wastewater collection, pumping and treatment systems. In addition, the Division is aggressively pursuing special efforts to reduce the inflow of hazardous pollutants, toxics, and heavy metals into the MWRA sewerage system.

Programs and Organizational Units

The Sewerage Division is organized into eight departments. Four of these departments are further divided into eighteen cost centers. The Division Director's Office provides central administrative responsibility, while each of the departments is responsible for one of the divisions eight programs. The programs operated by the Sewerage Division are as follows:

- Toxics Reduction and Control
- Maintenance Engineering
- Wastewater Pumping
- Wastewater Collection
- Collection CSO's/Tidegates
- North System Wastewater Treatment
- South System Wastewater Treatment
- Clinton Wastewater Treatment

Table 54, indicates the relationship of the Division's organizational units and programs.

Major Division Objectives

In FY89, the Sewerage Division will greatly increase industrial waste monitoring and enforcement efforts under the Toxics Reduction and Control program. In addition, under this program new activities will be implemented in the areas of septage and landfill site inspection and monitoring. Another major initiative of the Sewerage Division will be to implement an expanded inspection and repair program for the MWRA's interceptors in order to reduce infiltration and inflow entering into the system through pipeline breaks and illegal connection of roof and storm drains.

An ongoing capital improvement program for the treatment plants also impacts the FY89 Current Expense Budget. These initiatives will address areas in need of immediate upgrading to ensure that both plants meet discharge permit requirements. Activities include overhaul and maintenance of main pumps and engines and continuous monitoring of all treatment plant processes. The proposed Current Expense Budget provides for the necessary resources to effectively carry out the Sewerage Division's eight programs. The overall objectives of these programs in FY89 are as follows:

- o reduce the amount of hazardous pollutants and toxic wastes entering the sewerage system and impacting Boston Harbor.
- o provide uninterrupted transport of all dry-weather sewerage flows to treatment plants.
- o ensure compliance with state and federal discharge limitations.
- o reduce the volume of infiltration and inflow entering the MWRA sewerage system.
- o provide increased treatment of combined sewer overflows.

Division Budget Summary

The \$36.8 million FY89 Current Expense Budget for the Sewerage Division is an increase of about 15 percent over FY88. A summary of the budget for each of the Division's programs is presented in Table 55. Budget increases range from 2.3 percent for the North System Wastewater Treatment program to 126 percent for the Collection Departments CSOs/Tidegates program.

The costs of the Division Director's Office have been allocated to the program budgets based upon the proportion of each program's direct costs to the total direct costs of all eight programs. These allocated costs are listed in detail in Table 56. The FY89 budget includes two new positions for the Division Director's Office. These positions are Project Coordinator and Senior Clerk Typist.

The project coordinator will be responsible for expanding and coordinating the public education efforts of the Sewerage Division. The clerk typist is required to handle the increased administrative activities of the Division.

The FY89 cost of these new positions is approximately \$33,093.

On a line item basis, the Division's major expense categories are labor costs, professional services, chemical and utilities, and maintenance programs. Each of these cost categories is summarized below. Table 57 presents a line item summary of the Sewerage Division's budget. More detailed discussions of each line item, including new positions, are contained in the program budget descriptions.

Wages and Salaries

For FY89, 44 new positions are approved, which will bring the Division's total staffing level to 655. An expanded Toxics Reduction and Control program, and a reorganization of the management and operations at Deer Island, account for the largest increases in employees, 17 and 9 positions respectively. Existing and new positions for the Division are summarized by cost center in Table 58. Wage rate increases and higher fringe benefit costs for existing personnel have been budgeted as described in the Budget Overview section of this document.

Chemicals and Utilities

Chemicals and Utilities account for \$6.5 million of the total Division budget for FY89, an amount \$.3 million higher than the amount budgeted for FY88. Higher electricity usage and increased unit prices account for the major portion of the increase.

Maintenance

New maintenance programs include \$500,000 for repair of sewer pipelines to reduce inflow and infiltration and prevent emergency situations. Approximately \$1 million is provided for major overhauls and routine maintenance of pumps and engines at the treatment plants and pumping stations. Approximately \$1.2 million is budgeted for maintenance of building systems and treatment plant process equipment. Other maintenance items include cleaning supplies and groundskeeping materials.

Professional Services

Professional services includes approximately \$2.3 million for laboratory testing for all aspects of the Toxics Reduction and Control Program. This amount represents an increase of approximately \$1.3 million over the FY88 level. Also included in this line item are engineering consultants' fees of \$170,000 for design of major maintenance and repair projects and \$40,000 for design of materials for the Division's educational programs.

Table 54

SEWERAGE DIVISION
MATRIX OF PROGRAMS AND ORGANIZATIONAL UNITS

PROGRAMS	DIRECTOR'S OFFICE	WATER QUALITY	MAINTENANCE ENGINEERING	PUMPING DEPARTMENT	COLLECTION DEPARTMENT	DEER ISLAND TREATMENT PLANT	NUT ISLAND TREATMENT PLANT	CLINTON
TOXICS REDUCTION & CONTROL	X	X						
MAINTENANCE ENGINEERING	X		X					
WASTEWATER PUMPING	X			X				
WASTEWATER COLLECTION/TRANSPORT	X				X			
COLLECTION CSO's/TIDEGATES	X				X			
NORTH SYSTEM WASTEWATER TREATMENT	X					X		
SOUTH SYSTEM WASTEWATER TREATMENT	X						X	
CLINTON SYSTEM WASTEWATER TREATMENT	X							X

Table 55

DIVISION: SEWERAGE	DIVISION SUMMARY BY PROGRAM				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
PROGRAMS					
TOXICS REDUCTION & CONTROL	\$2,996,152	\$5,726,416	\$4,849,054	\$1,852,902	61.8%
MAINTENANCE ENGINEERING	744,306	943,473	972,410	228,104	30.6%
WASTEWATER PUMPING	4,946,170	5,754,205	5,480,107	533,936	10.8%
WASTEWATER COLLECTION	1,992,940	2,718,659	2,627,622	634,682	31.8%
COLLECTION CSO'S/TIDEGATES	220,673	541,714	499,333	278,659	126.3%
NORTH SYSTEM WASTEWATER TREATMENT	15,437,371	17,410,911	15,790,748	353,377	2.3%
SOUTH SYSTEM WASTEWATER TREATMENT	5,094,562	6,591,433	5,955,470	860,908	16.9%
CLINTON	452,861	627,656	621,176	168,316	37.2%
DIVISION TOTAL:	\$31,885,035	\$40,314,469	\$36,795,920	\$4,910,885	15.4%

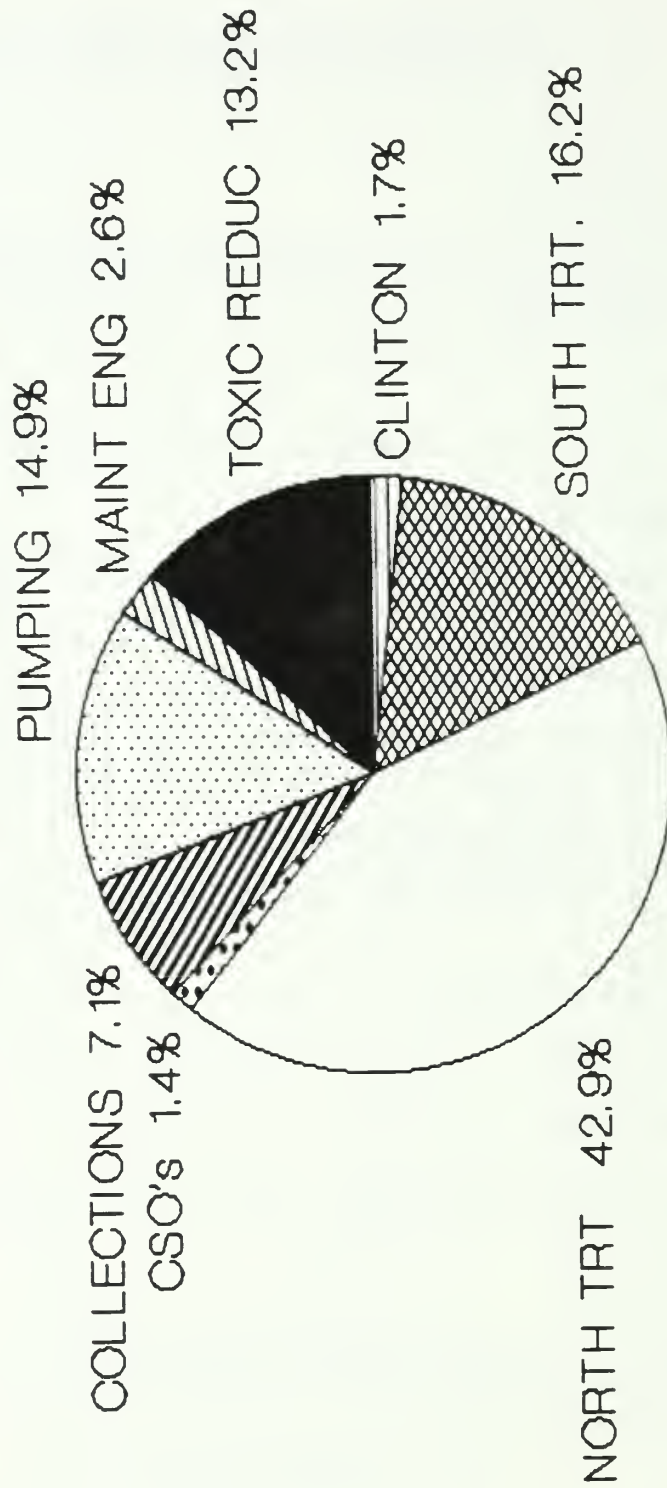
Table 56

**Sewerage Division Allocated Costs
of Division Director's Office**

Wages and Salaries	\$ 979,292
Includes funding for two additional positions. Estimated wage increases for all Division employees are also budgeted in this line item.	
Overtime	\$ 12,450
For Director's Office administrative staff.	
Fringe Benefits	\$1,954,342
Includes health and dental insurance for all Division employees.	
Workers' Compensation	\$ 585,000
Includes medical costs, monthly compensation payments and lump sum settlements for the total Division.	
Education, Training and Meetings	
Tuition reimbursement	4,500
Training, seminars and conferences	<u>10,500</u>
	\$ 15,000
Professional Services	\$ 40,000
Division's public education program.	
Other Materials	\$ 28,480
Includes expenses for boat, harbor monitoring and vehicle expenses.	
Other Services	\$ 126,288
Includes Calf Pasture Pumping Station lease and boat dockage fees, \$110,000 and \$6,000, respectively.	
Total Allocated Costs	<u><u>\$3,740,852</u></u>

SEWERAGE DIVISION

PROPORTION OF CURRENT EXPENSE BUDGET BY PROGRAM IN FY89



SEWERAGE DIVISION PROGRAM BUDGET COMPARISON FY88 - FY89

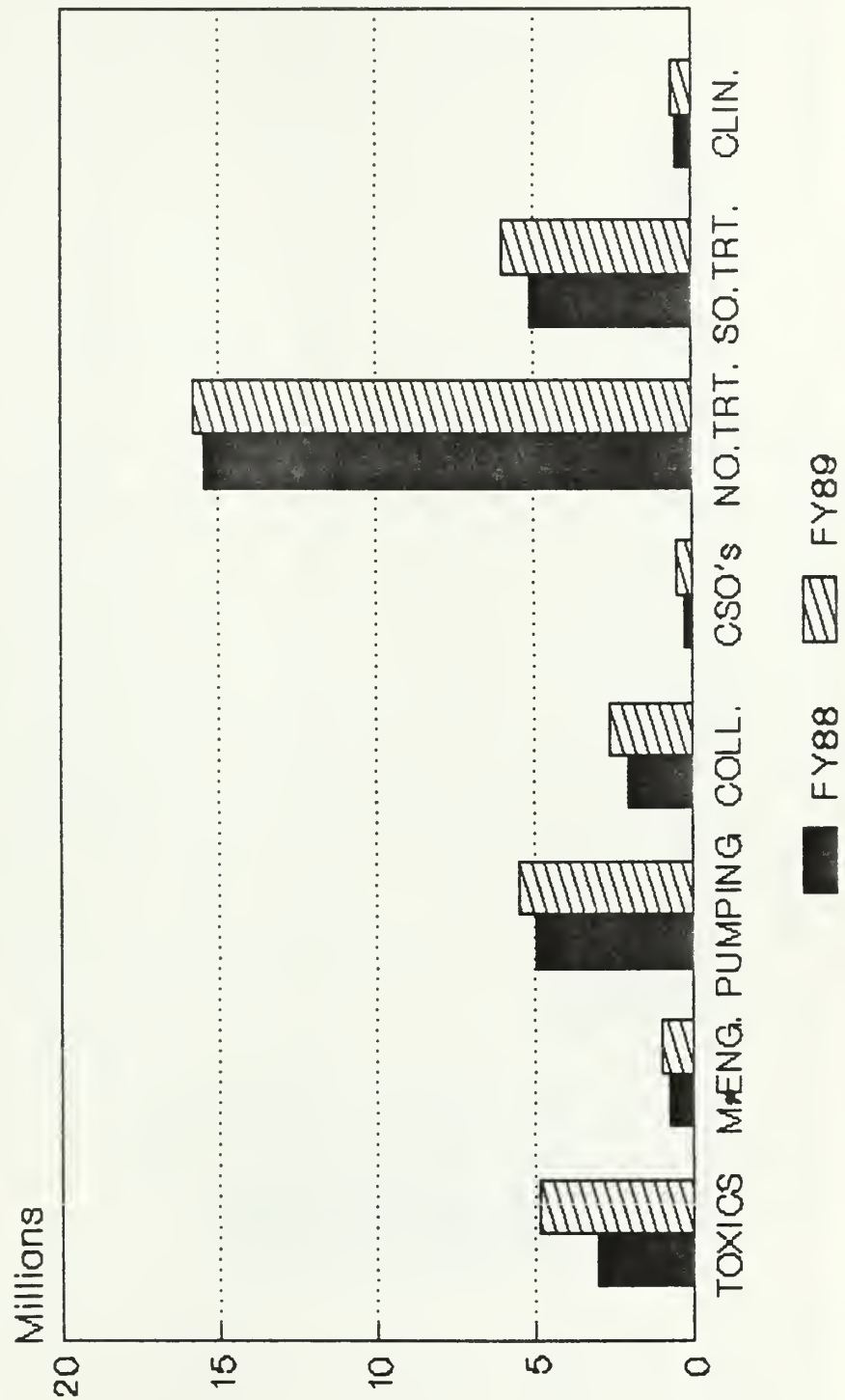


Table 57

DIVISION: SEWERAGE	PROGRAM SUMMARY BY LINE ITEM			
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$15,534,338	\$19,235,824	\$17,562,993	\$2,028,655 13.1%
OVERTIME:	\$1,562,093	\$1,863,055	\$1,858,055	\$295,962 18.9%
FRINGE BENEFITS:	\$1,688,334	\$2,049,515	\$1,997,231	\$308,897 18.3%
WORKERS' COMPENSATION:	\$410,200	\$585,000	\$585,000	\$174,800 42.6%
CHEMICALS:	\$3,203,068	\$3,649,420	\$2,769,259	(\$433,809) -13.5%
UTILITIES AND ENERGY:	\$2,962,730	\$3,990,780	\$3,709,757	\$747,027 25.2%
ONGOING MAINTENANCE:	\$2,312,098	\$2,351,346	\$2,221,596	(\$90,502) -3.9%
NEW MAINTENANCE:	\$365,314	\$1,262,705	\$1,207,705	\$842,391 230.6%
EDUC, TRAIN, & MEETINGS:	\$78,625	\$74,062	\$62,062	(\$16,563) -21.1%
PROFESSIONAL SERVICES:	\$1,236,496	\$2,964,600	\$2,564,600	\$1,328,104 107.4%
OTHER MATERIAL:	\$544,459	\$730,421	\$699,921	\$155,462 28.6%
OTHER SERVICES:	\$1,987,280	\$1,557,741	\$1,557,741	(\$429,539) -21.6%
DIVISION TOTAL:	\$31,885,035	\$40,314,469	\$36,795,920	\$4,910,885 15.4%

SEWERAGE DIVISION SUMMARY OF DIRECT EXPENSES FY88 - FY89 COMPARISON

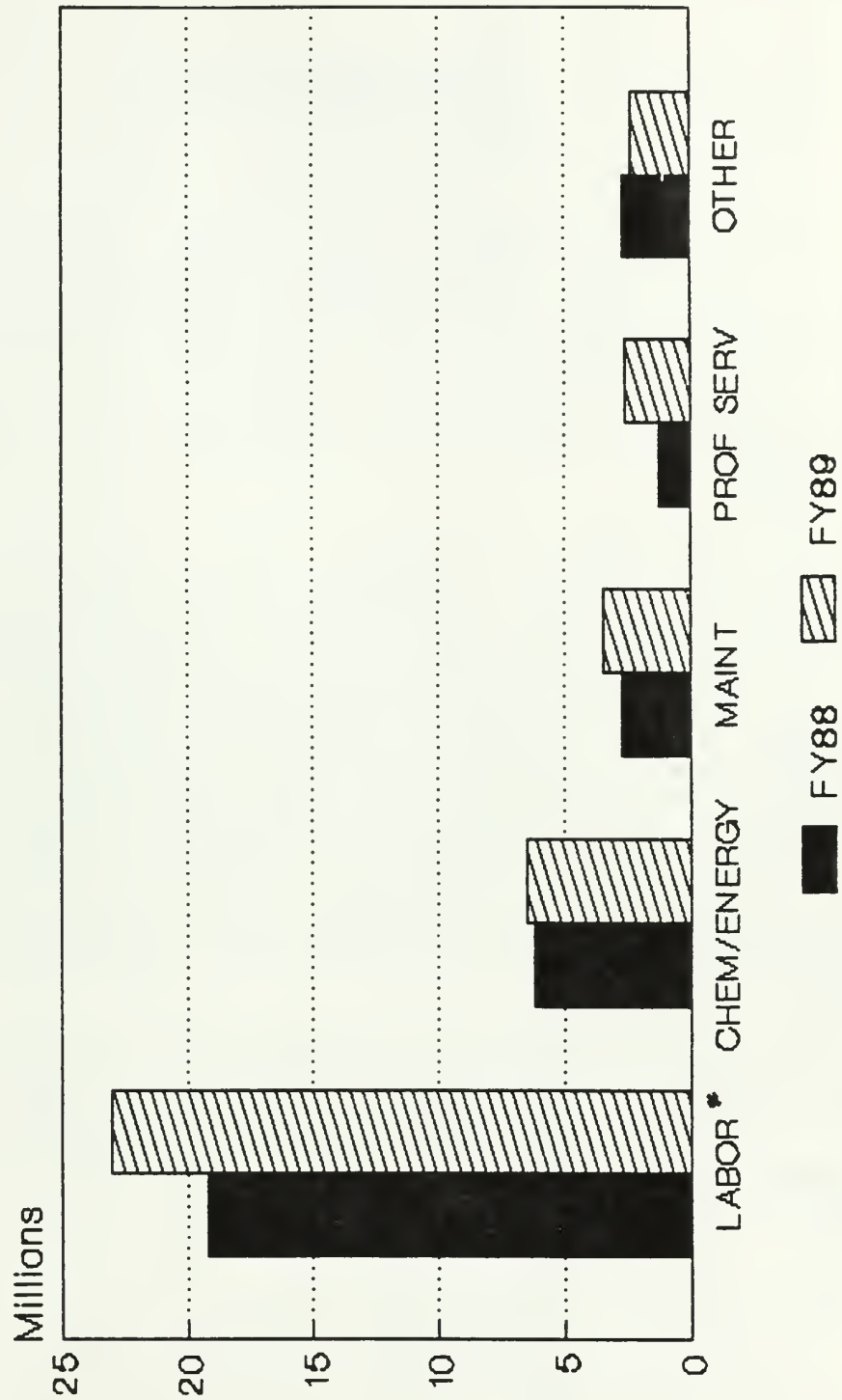


Table 58

MASSACHUSETTS WATER RESOURCES AUTHORITY
FY89 CURRENT EXPENSE BUDGET
PLANNED STAFFING LEVELS BY COST CENTER

SEWERAGE DIVISION

DEPARTMENT/COST CENTER	POSITIONS IN FY88 BUDGET	POSITIONS TRANSFERRED IN FY88	POSITIONS TRANSFERRED TO FY89	POSITIONS ADDED IN FY88	PLANNED POSITIONS 6/30/88	POSITIONS TO BE FILLED IN FY89	PROPOSED ATTRITIONS	PLANNED POSITIONS 6/30/89
DIRECTOR'S OFFICE	18	1	-	-	19	2	-	21
TOXICS REDUCTION & CONTROL	48	-	-	-	48	17	-	65
MAINTENANCE ENGINEERING	11	-	-	1	12	3	-	15
PUMPING								
SUPERINTENDENT	10	-1	-	-	9	-	-	9
SUPPORT	25	-	-	-	25	1	-	26
PUMP STATIONS	74	-	-	-	74	-	-	74
CSO's	21	-	-	-	21	1	-	22
COLLECTION SYSTEM								
SUPERINTENDENT	3	-	-	-	3	6	-	9
NORTH DISTRICT	36	(1)	-	-	35	-	-	35
GRAVITY CSO	8	-	-	-	8	4	-	12
SOUTH DISTRICT	27	(1)	-	-	26	-	-	26
NUT ISLAND								
SUPERINTENDENT	7	-	-	-	7	-	-	7
OPERATIONS	27	(1)	-	-	26	-	-	26
MAINTENANCE	50	-	-	-	50	-	-	50
STORES	3	-	-	-	3	-	-	3
LABORATORY	4	1	-	-	5	-	-1	4
DEER ISLAND								
SUPERINTENDENT	12	2	-	-	14	1	-	15
OPERATIONS	105	(2)	-	-	103	7	-	110
MAINTENANCE	105	(5)	-	-	100	1	-	101
STORES	5	-	-	-	5	-	-	5
LABORATORY	6	-	-	-	6	-	-	6
CLINTON	13	-	-	-	13	1	-	14
DIVISION TOTAL	618	(7)	0	1	612	44	-1	655

Program: Toxics Reduction and Control

Program Description

The Toxics Reduction and Control Department is implementing an aggressive, multi-faceted program designed to minimize and control the inflow of hazardous pollutants, toxics and heavy metals into the MWRA sewerage system. Reducing the introduction of hazardous pollutants into the sewer system will improve the water quality of Boston Harbor and enhance the quality and marketability of MWRA sludge. The Toxics Reduction and Control Program is focusing on three major sources of pollutants: industries within the MWRA service area, local landfills and septage from user communities. To effectively carry out this program, Department personnel undertake a series of specialized activities in the areas of permitting, monitoring, inspection, enforcement, and public education.

The Toxics Reduction and Control Department administers an Industrial Waste permitting and inspection effort that allows the MWRA to control and limit the volume and type of industrial waste discharged into its sewerage system. This program serves as the enforcement mechanism for federal, state and MWRA wastewater discharge regulations. Some 6,000 industries located within the MWRA's service area are regularly inspected. The Department issues detailed industrial permits defining acceptable waste discharge. Program personnel are also responsible for developing and monitoring pretreatment processes for certain industries whose wastes are not suitable for immediate discharge into the MWRA system. This pretreatment program encompasses industries in the MWRA's North System, South System and Clinton wastewater service areas.

Follow-up inspections are conducted for 650 industries to check the progress of a pretreatment program, verify compliance with permit conditions, or investigate complaints and monitor corrective action. The Department is also responsible for initiating and following-up on compliance and enforcement action against those industries found to be in violation of permit conditions or sewer use regulations.

New regulations allow the liquid that leaches from sanitary landfills to be discharged into local sewer systems if the leachate meets certain criteria. The content of landfill leachate can often vary widely, from harmless substances to dangerous PCB's and heavy metals. As a result, the Toxics Reduction Program is undertaking a special effort to

periodically sample leachate from landfills; in order to identify the type and amount of any toxic substances and to develop appropriate pretreatment programs and compliance measures. In addition to helping to minimize toxic inflows into the harbor, this program will help to protect ground-water supplies.

A third aspect of the Toxics Reduction and Control program's effort to reduce the inflow of pollutants into the MWRA sewerage system is its Septage Disposal Site Inspection and Monitoring activities. These activities consist of two major components: overseeing the septage-control activities of municipalities with septage-receiving locations, and monitoring each septage-receiving location to insure that MWRA regulations are being met and to identify any illegal dumping. In addition to reducing the volume of toxic waste entering the MWRA system, these activities will help to lower the overall cost of sewerage service to member communities by excluding septage received from non-MWRA communities.

The Toxics Reduction and Control Program, also undertakes a variety of other activities to monitor and improve the water quality of Boston Harbor. The staff is responsible for protecting the MWRA's sewerage system from gasoline and oil contamination; responding to and rectifying emergency situations; issuing sewage discharge permits annually to all 43 user communities; and monitoring the compliance of MWRA treatment plants with NPDES permit conditions.

In FY89 the Toxics Reduction and Control program will be utilizing the data gathered from its various monitoring activities to estimate the relative contributions of hazardous pollutants entering the MWRA sewer system from industrial sources, households, landfills, septage sites and runoff from combined sewer areas. New strategies to minimize the inflow of toxics and hazardous pollutants into the MWRA sewer system will be developed from this baseline data.

Program Goals

- o to improve the water quality of Boston Harbor and protect the sewerage treatment plants by reducing and controlling the discharge of toxics and other hazardous materials into the MWRA sewerage system.
- o to enhance the effectiveness of the MWRA's Residual Management Program by improving the quality of MWRA sludge.

Performance Objectives

To further reduce the load of heavy metals and toxics entering the MWRA sewerage system, toxic reduction and control efforts will be intensified and expanded during FY89.

To accomplish this objective, the Department plans to increase its activity in the areas of septage and landfill monitoring; and industrial inspection, monitoring, and enforcement:

- o monitoring activities at industries, MWRA wastewater treatment and CSO facilities, septage-receiving facilities and landfills will be increased from 873 in FY88 to 2,500 in FY89.
- o inspections at such sites, particularly at "problem industries", will be increased from 2,600 in FY88 to 2,800 in FY89.
- o the number of active municipal and industrial permits issued is expected to increase from 650 in FY88 to 1,550 in FY89, because of new MWRA regulations.
- o resolve 100% of non-compliance violations resulting from monitoring and inspecting.
- o begin to develop programs to identify and reduce toxic inflows from households and runoff from combined sewer areas.

Program Budget

A total FY89 budget of \$4.8 million is budgeted for the Toxics Reduction and Control program. This includes \$4.4 million of direct costs and \$0.4 million in allocated costs of the Division Director's Office. A summary of the budget by line item is presented in Table 59.

Wages and Salaries

The 17 new positions approved for the Toxics Reduction and Control program are listed below.

- Sampling Associate (4)
- Industrial Waste Inspector (2)
- Trap Inspector (2)
- Septage Inspector (2)
- Compliance Engineer

Permit Coordinator
Manager of Technical Services
Project Engineer
Data Control Coordinator
Secretary II
Chief Enforcement Officer

The FY89 objectives of this program include a significant expansion in sampling, monitoring and inspection activities. These positions are essential in order to gather and act upon the necessary technical data which is the basis for the success of the program. The FY89 cost of these new positions is approximately \$260,996.

Professional Services

The approved budget for professional services includes laboratory testing services for analysis of samples from the various testing programs (e.g. industrial monitoring, inspection, septage, landfill monitoring). Budgeted amounts for each of these areas of analytical testing together with allocated professional services costs are shown below.

Incident Response	\$ 30,870
Septage Haulers	693,100
Chemical Testing - NPDES	73,100
Biotoxicity Testing	360,000
Soil/Sludge Testing	76,000
Industrial Waste Pre-Treatment Tests	689,734
Clinton Wastewater Plant Treatment Tests	176,496
Sanitary Landfill Testing	200,700
Allocated Costs	<u>\$ 5,327</u>
Total	\$2,305,327

The Septage monitoring program, a new initiative by the unit, involves monitoring an average of 10-15 percent of the trucks using the existing 22 septage sites each week. A full scan analysis identifying metals and other toxics would be required for each truck. It is anticipated that this random sampling effort will serve as an effective control and deterrent.

The biotoxicity analytical services includes water quality and toxicity testing of the wastewater discharges (NPDES compliance) from the 2 primary treatment plants and the 3 CSO detention facilities. Funding for additional analyses have also been included in the FY89 budget in this category for bioaccumulation assessment at the outfall site.

The Industrial Pre-Treatment program involves monitoring the wastewater discharges of about 650 industries, which includes about 2,800 monitoring activities in FY89.

Analytical services for the Sanitary Landfill monitoring program will ensure that all leachate discharges to the sanitary sewer system are acceptable under the Authority's Rules and Regulations.

Education, Training and Meetings

In addition to tuition reimbursement of \$3,000, this line item includes \$16,230 for attending various EPA seminars and pollution control conferences.

Other Materials

The major items in this category are automatic samplers and portable flow meters accounting for \$56,000 and \$40,000, respectively, of the line item. In addition, about \$42,500 for replacement supplies for existing testing equipment is included in the budget. These additional supplies are required to support the increased monitoring and testing activities.

Table 59

DIVISION: SEWERAGE	TOXICS REDUCTION & CONTROL			
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$1,534,618	\$2,401,211	\$1,982,897	\$448,279 29.2%
OVERTIME:	\$11,254	\$26,350	\$26,225	\$14,972 133.0%
FRINGE BENEFITS:	\$160,687	\$250,887	\$221,049	\$60,363 37.6%
WORKERS' COMPENSATION:	\$40,523	\$73,026	\$66,048	\$25,525 63.0%
CHEMICALS:	\$0	\$0	\$0	N/A
UTILITIES AND ENERGY:	\$0	\$0	\$0	N/A
ONGOING MAINTENANCE:	\$9,120	\$8,035	\$8,035	(\$1,085) -11.9%
NEW MAINTENANCE:	\$3,752	\$0	\$0	(\$3,752) -100.0%
EDUC, TRAIN, & MEETINGS:	\$15,191	\$19,380	\$19,230	\$4,039 26.6%
PROFESSIONAL SERVICES:	\$1,075,896	\$2,705,729	\$2,305,327	\$1,229,431 114.3%
OTHER MATERIAL:	\$117,439	\$192,732	\$172,446	\$55,007 46.8%
OTHER SERVICES:	\$27,672	\$49,066	\$47,797	\$20,125 72.7%
PROGRAM TOTAL:	\$2,996,152	\$5,726,416	\$4,849,054	\$1,852,902 61.8%

Program: Technical Support

Program Description

The Technical Support staff of the Maintenance Engineering Department provides the engineering services necessary to properly maintain and repair the Sewerage Division's sewage collection, pumping, and treatment systems. These activities support a variety of functions of the Wastewater Pumping, Collections, and North System and South System Treatment programs. In most cases, the in-house Technical Support staff minimizes the need for outside consultants, enabling projects to be carried out more quickly and economically. During FY89, the staff will also assist in the development of a preventive maintenance and maintenance management program for the Sewerage Division. Specific projects planned for FY89 include Nut Island sludge collectors, Deer Island odor monitoring and Clinton facilities improvements. A complete list of projects to be managed by the Technical Support program in FY89 is provided in Table 60.

Program Goals

- o to provide the technical engineering services for the ongoing maintenance and repair of the MWRA's sewerage system.

Performance Objectives

During FY89, the Technical Support staff will manage 22 capital improvement and 17 major maintenance projects totaling \$38 million.

Program Budget

A total FY89 budget of \$1 million is approved for the Technical Support program. This includes \$0.9 million of direct costs and \$0.1 million in allocated costs of the Division Director's Office. A summary of the budget by line item is presented in Table 61.

Wages and Salaries

An increase in the number of projects for the division which will require engineering services accounts for the additional three people included in the FY89 budget for this program. These positions are listed on the following page.

Program Manager

Project Manager (2)

The new positions include a Program Manager for the Clinton Wastewater Treatment Plant. Other new staff will help to manage studies, designs, and implementation of an increased number of maintenance and rehabilitation projects. The FY89 cost of these new positions is approximately \$105,000.

Ongoing Maintenance

This line item contains the cost of the annual boiler maintenance and inspection contract for all Sewerage Division facilities. The FY89 budget for this item is \$80,000.

Professional Services

The Professional Services budget for Technical Support includes \$170,000 for consulting engineering services for study, design and construction services for major maintenance and repair projects including a maintenance study for the Clinton Wastewater Treatment plant. In addition, \$10,000 has been included for laboratory testing of materials and soils and for emergency service contracts.

Table 60

Sewerage Division Technical Support Program
FY89 Capital and Maintenance Projects

Capital Projects

Nut Island Personnel Facilities
Nut Island Interim Interior and Landscaping Program
Dual Fuel Engine Generator Overhaul
Deer Island Odor Monitoring
Nut Island Brick Chimney Repair - Design
Cottage Farm Bar Screen and Charlestown Pump Repairs
Deer Island Personnel Facilities Upgrade
Coordination of Operations and Construction
Slade Siphon
Deer Island Process Water Reservoir - Cleaning/Const.
Safety Report Action Contracts
South Maintenance Facility
Watertown Siphon
Cottage Farm CSO Diesel Replacement
Deer Island Instrument and Chlorinator Contract
Nut Island Electric Distribution Sub-station
Nut Island Sewage Pump Switchgear Replacement
Nut Island Sludge Cross Collectors
Deer Island HVAC Contract
New Emergency Lighting/Cottage Farm Facility
Deer Island Exhaust Silencer Replacement
Clinton Interim Facilities Improvement

Maintenance Projects

Prison Point Hypochlorite Piping
Prison Point Metering Manhole
Deer Island Elevator Contract
Boiler Maintenance Contract
Deer Island Grit and Screenings
Nut Island Grit and Screenings
Deer Island Window Replacement
Window Replacement, Squantum Pumping Station
Roof Repair/Squantum, Quincy, Charlestown
Hypochlorite & Water Pipe Replacement
Transfer Switch Replacement
Repoint Chimneys/Pumping Stations
Bituminous Concrete Paving
Boston Marginal Conduit
Fencing Replacement/Various Pumping Stations
Bituminous Concrete Paving/Winchester
Fisher Porter Maintenance Contract

Table 61

DIVISION: SEWERAGE	MAINTENANCE ENGINEERING				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$425,930	\$574,517	\$594,285	\$168,355	39.5%
OVERTIME:	\$8,705	\$10,286	\$10,322	\$1,617	18.6%
FRINGE BENEFITS:	\$44,725	\$60,232	\$66,430	\$21,705	48.5%
WORKERS' COMPENSATION:	\$11,247	\$17,472	\$19,795	\$8,548	76.0%
CHEMICALS:	\$0	\$0	\$0	\$0	N/A
UTILITIES AND ENERGY:	\$0	\$0	\$0	\$0	N/A
ONGOING MAINTENANCE:	\$76,446	\$80,000	\$80,000	\$3,554	4.6%
NEW MAINTENANCE:	\$23	\$0	\$0	(\$23)	-100.0%
EDUC, TRAIN, & MEETINGS:	\$3,486	\$5,344	\$5,388	\$1,903	54.6%
PROFESSIONAL SERVICES:	\$150,000	\$180,918	\$181,035	\$31,035	20.7%
OTHER MATERIAL:	\$3,355	\$6,404	\$6,487	\$3,132	93.3%
OTHER SERVICES:	\$20,389	\$8,299	\$8,668	(\$11,721)	-57.5%
PROGRAM TOTAL:	\$744,306	\$943,473	\$972,410	\$228,104	30.6%

Program: Wastewater Pumping Services

Program Description

A network of 11 major pumping stations pumps sewage from all parts of the MWRA's sewerage system service area to the Nut Island and Deer Island wastewater treatment facilities. The Pumping Services Department keeps these 11 pumping stations operating around the clock throughout the year. The major stations house 27 steam, electric, or diesel-powered pumping units as well as air compressors, generators and a variety of smaller, support pumping units. Support services including painting, electrical maintenance, and plumbing are provided to each pumping station by a central Pumping Service Department support staff.

The pumping program also includes the operation and maintenance of stormwater detention facilities for combined sewage overflow facilities at Prison Point and Cottage Farm and two oil-separation pumps at the B&M railroad yard in Somerville.

The MWRA's sewage pumping system consists of both older and recently installed equipment and support units. To keep equipment operating at all times and to ensure that it is capable of accommodating increasing system demands, the staff carries out an on-going maintenance program for all pumping stations. Maintenance activities include pump and engine overhauls, fabrication of replacement parts and repairs to fuel injectors.

Program Goals

- o to keep the MWRA's sewage pumping stations operating continuously at a high level of efficiency.
- o to plan and implement improvements that will ensure that the sewage pumping system can accommodate wastewater flows from all parts of the MWRA service area.

Performance Objectives

During FY89, the Pumping Services Department objectives are to:

- o maintain 96 percent of all pumping and support units operable at any given time, with the remaining 4 percent shut down for planned maintenance.

- o increase the percentage of pump operability at CSO facilities upon activation from 87 percent in FY88 to 100 percent in FY89.

Program Budget

A total FY89 budget of \$5.5 million is approved for the Wastewater Pumping program. This includes \$4.8 million of direct costs and \$0.7 million in allocated costs of the Division Director's Office. A summary of the budget by line item is presented in Table 66.

Wages and Salaries

Two new positions are budgeted for FY89 in order to improve pump station maintenance and ensure continued reliable operations.

STP Equipment Repairman
Diesel Power Plant Operator

The FY89 cost of these new positions is approximately \$36,000.

Overtime

In FY89 \$245,000 is approved for this line item. This overtime is necessary due to the need to maintain operation of the 11 pumping stations around the clock. In addition, overtime is required on an "as needed basis" for the operation of the combined sewerage overflow facilities.

Chemicals

A total budget of \$71,500 budgeted for this line item. It includes approximately \$21,000 for the odor control program at the Squantum, Hayes, and Quincy pumping stations. The remainder is for sodium hypochlorite.

Utilities

Total budgeted utility costs for this program in FY89 are \$495,000. Increases in electricity are the result of the new East Boston station being placed into service and the full year operation of the Hayes Station. In addition, the repair and return to service of the electric motor driven pump at Cottage Farm will result in increased electricity costs.

Ongoing Maintenance

The FY89 budget for this line item is \$289,000. Items are listed below.

Pump, motor, fuel injector repairs	\$198,720
Crane structure reinforcement	11,400
Janitorial, grounds maintenance	53,936
Miscellaneous tools	4,867
Miscellaneous materials	<u>20,101</u>
Total	\$289,024

New Maintenance

The approved FY89 budget for new maintenance is \$175,000. The major cost is for overhauls of engines at the Quincy, Braintree/Weymouth, and Charlestown pump stations. These overhauls are required to ensure sufficient pumping capacity is available at all times.

Engine overhauls (Quincy, Braintree/Weymouth, Charlestown)	\$125,000
Cement berms (EPA requirement)	14,151
Back up striping pump for Prison Pt.	8,000
Replace steel doors (Cottage Farm)	6,000
Trash removal service	6,000
Heating unit (Charlestown)	4,000
Miscellaneous materials	<u>11,849</u>
Total	\$175,000

Other Materials

Items included in the Other Materials budget for this program are as follows:

Work clothes	\$ 41,540
Vehicle expense (new support vehicles)	17,740
First aid supplies	6,500
Specialized tools	5,000
Automatic sampler parts	3,000
Office supplies	5,377
Miscellaneous other materials	<u>10,432</u>
Total	\$ 89,589

Table 62

DIVISION: SEWERAGE	WASTEWATER PUMPING				
EXPENSE LINE ITEM:	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
WAGES AND SALARIES:	\$3,297,681	\$3,718,443	\$3,531,124	\$233,443	7.1%
OVERTIME:	\$190,087	\$245,402	\$245,474	\$55,387	29.1%
FRINGE BENEFITS:	\$353,012	\$394,986	\$400,019	\$47,007	13.3%
WORKERS' COMPENSATION:	\$87,079	\$113,085	\$117,617	\$30,538	35.1%
CHEMICALS:	\$30,850	\$85,499	\$71,499	\$40,649	131.8%
UTILITIES AND ENERGY:	\$447,352	\$516,468	\$494,833	\$47,481	10.6%
ONGOING MAINTENANCE:	\$234,502	\$289,024	\$289,024	\$54,521	23.2%
NEW MAINTENANCE:	\$174,151	\$230,000	\$175,000	\$849	0.5%
EDUC, TRAIN, & MEETINGS:	\$5,833	\$6,919	\$5,006	(\$827)	-14.2%
PROFESSIONAL SERVICES:	\$0	\$10,570	\$10,803	\$10,803	N/A
OTHER MATERIAL:	\$82,436	\$94,423	\$89,589	\$7,152	8.7%
OTHER SERVICES:	\$43,188	\$49,387	\$50,120	\$6,933	16.1%
DIVISION TOTAL:	\$4,946,170	\$5,754,205	\$5,480,107	\$533,936	10.8%

Program: Wastewater Collection and Transport

Program Description

The Collections Department is responsible for the operation and maintenance of an efficient, reliable, and environmentally sound collection and transport system that conveys wastewater from the MWRA's 43 communities to the pumping system for eventual treatment at the Deer Island or Nut Island treatment plant. This wastewater flows first through pipes locally owned and maintained by user communities. These 5,400 miles of municipal sewer are connected to the MWRA collection and transport system at some 2,000 locations.

The MWRA's collection and transport system consists of a network of 230 miles of interceptor sewer, siphons, pumps and regulators. This system is geographically divided into two subsystems that serve a combined population of more than 2.2 million users.

The South System receives flows from the MWRA's service area that extends north to Boston, west to Ashland, and south to Stoughton. The North System conveys flows from the remaining portions of the service area. Tables 62 and 63 list the communities served by each system. Maintaining the uninterrupted flow of wastewater through the North and South Systems requires regularly scheduled cleaning and maintenance of all equipment and the inspection of interceptor and sewer lines to detect and repair breaks in the system.

Over the past several years, a number of MWRA communities have experienced significant population growth and local development. As a result, the flow of wastewater from local communities can exceed the current capacity of the MWRA's interceptor system during periods of peak wet weather flow. This system overload can cause the backup of untreated sewage into basements and local waterways. To help minimize back-up problems during wet weather conditions, the Collections Department is carrying out a special project to reduce the amount of infiltration and inflow (I/I) into the system. I/I is defined as surface and groundwater entering the system through pipeline breaks and illegal connections of roof and storm drains. Reducing I/I effectively increases the capacity of the existing system, allowing it to safely transport excess amounts of wastewater during peak periods without creating backup problems for system users or harming the environment.

Program Goals

- o to operate a reliable, environmentally sound wastewater collection and transport system by:
 - minimizing potential public safety and health problems resulting from improper infiltration and inflow into the system.
 - constantly monitoring systems conditions, promptly responding to all complaints and emergency situations and taking appropriate corrective action.
 - helping user communities to identify and resolve problems with local sewer systems that connect to the MWRA's system.

Performance Objectives

The Collections Department has reduced the amount of improper infiltration and inflow entering the MWRA's wastewater collection and transport system - eliminating 100,000 gallons per year in FY88. Through stepped-up maintenance and monitoring activities during FY89, the Department will:

- o eliminate an additional 300,000 gallons of I/I per year, minimizing sewer backups and resultant dry-weather overflows.
- o intensify the closed circuit TV internal sewer inspection program to inspect 17 miles of interceptor pipeline, initiating a project to inspect and repair MWRAs wastewater collection and transport system every 10 years.

Based on the pipe video, the Department will:

- o identify and repair structurally unsound sections of pipeline to minimize infiltration and inflow and prevent emergency breaks.
- o formally catalogue all local connections to the collection and transport system and eliminate illegal connections.

In addition to making the system more efficient and effective, these activities will extend the useful life of existing facilities, giving the MWRA additional time to analyze and plan more cost-effective, long-term improvements to the wastewater collection system.

Program Budget

A total FY89 budget of \$2.6 million is approved for the Wastewater Collection and Transport program. This amount includes \$1.8 million of direct costs and \$0.8 million in allocated costs of the Division Director's Office. In addition, the program includes costs allocated from the Collections Superintendent's Office of about \$0.4 million. A summary of the program budget is presented in Table 64.

Wages and Salaries

The FY89 cost of this line item is \$1.6 million including allocated costs. There are no increases proposed in the staffing level. However, the wages and salaries line item includes an allocation from the Superintendent's Office of about \$0.1 million for a share of the Infiltration/Inflow inspection crews. The costs of these crews is allocated between this program and the Collection CSO's/Tidegates program. The I/I survey crew positions are listed below.

- Project engineer
- Working foreman
- Instrument technician
- Skilled laborer
- Laborers (2)

The above positions together with existing positions will provide staffing for three inspection crews, each of which will inspect 7-8 miles of sewer line each year.

Chemicals and Utilities

The budget for chemicals includes approximately \$8,000 for sodium hypochlorite and about \$5,000 for a degreasing agent to clear sewer lines. The FY89 electricity budget for the collections program is \$17,000 which is utilized by the Collections maintenance facilities. The remainder of the budgeted Utilities and Energy expenses are for water/sewer and propane expense.

Ongoing Maintenance

The FY89 budget for this line item is \$99,561. Approximately \$79,000 is for materials to repair sewer lines such as bricks, mortar and iron rods. The remaining budgeted amount includes miscellaneous materials for building repairs and cleaning and groundskeeping services.

New Maintenance

The FY89 budget for this line item is \$0.5 million and reflects the allocation from the Superintendent's Office of pipeline repair services for the Infiltration and Inflow program. Also included in this line item are maintenance items listed below.

Install Fencing - North Maintenance Yard	\$ 15,000
Paving of South Maintenance Yard	25,000
Odor Control Program - Framingham Sewer	30,000
Shoring, Cable, Brick, Flat Stock for line repairs	60,000
Trash Removal	6,000
Miscellaneous Materials (grounds, hardware, tools, etc.)	<u>33,161</u>
Total	\$169,561

Education, Training and Meetings

In addition to tuition reimbursement of \$4,500, this line item includes about \$4,700 for attendance at DEQE and NEWPC meetings.

Table 63

North Collection System Service Area

<u>City/Town</u> ¹	<u>Total Population</u> ²	<u>Sewered Area Square Miles</u>
Arlington	44,350	4.64
Bedford	12,490	1.63
Belmont	25,020	3.79
Boston (partial)	424,007	22.23
Brookline (partial)	31,940	1.38
Burlington	22,750	8.97
Cambridge	91,260	5.42
Chelsea	25,640	2.06
Everett	36,330	2.91
Lexington	28,610	15.77
Malden	53,490	4.23
Medford	56,830	5.98
Melrose	28,790	3.81
Milton (partial)	4,340	0.42
Newton (partial)	36,142	6.27
Reading	22,550	9.02
Revere	43,510	5.55
Somerville	72,280	3.96
Stoneham	22,550	4.22
Wakefield	25,170	6.33
Waltham	57,090	11.38
Watertown	32,890	3.80
Wilmington	17,530	15.13
Winchester	20,120	5.31
Winthrop	18,640	1.59
Woburn	37,380	12.23
Total	1,292,099	168.03

¹Includes all communities contributing fully or partially to the Deer Island Wastewater Treatment Plant.

²Populations are based on the 1986 U.S. Census Estimates. Estimated contributing population is shown for partial communities.

Table 64

South Collection System Service Area

<u>City/Town</u> ¹	<u>Total Population</u> ²	<u>Sewered Area Square Miles</u>
Ashland	10,800	9.40
Boston (partial)	149,193	16.96
Braintree	34,690	13.44
Brookline (partial)	20,420	3.95
Canton	18,340	17.73
Dedham	23,810	9.54
Framingham	63,890	22.50
Hingham (partial)	6,895	2.50
Holbrook	10,880	4.50
Milton (partial)	21,160	8.56
Natick	30,270	14.58
Needham	27,240	7.13
Newton (partial)	45,998	8.11
Norwood	28,220	10.14
Quincy	82,630	11.39
Randolph	28,580	6.25
Stoughton	27,190	14.70
Walpole	19,720	20.16
Wellesley	26,550	9.89
Westwood	12,580	9.18
Weymouth	<u>54,480</u>	<u>16.22</u>
Total	743,606	236.83

¹Includes all communities contributing either fully or partially to the Nut Island Wastewater Treatment plan.

²Population is based on the 1986 U.S. Census Estimates. Estimated contributing population is shown for partial communities.

Table 65

DIVISION: SEWERAGE	WASTEWATER COLLECTION				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$1,411,221	\$1,707,519	\$1,617,229	\$206,007	14.6%
OVERTIME:	\$67,701	\$57,081	\$57,130	(\$10,571)	-15.6%
FRINGE BENEFITS:	\$149,222	\$180,123	\$181,959	\$32,737	21.9%
WORKERS' COMPENSATION:	\$37,265	\$51,929	\$53,868	\$16,603	44.6%
CHEMICALS:	\$11,740	\$13,890	\$13,890	\$2,150	18.3%
UTILITIES AND ENERGY:	\$17,023	\$22,819	\$16,755	(\$268)	-1.6%
ONGOING MAINTENANCE:	\$130,482	\$99,561	\$99,561	(\$30,921)	-23.7%
NEW MAINTENANCE:	\$65,386	\$486,572	\$489,725	\$424,340	649.0%
EDUC, TRAIN, & MEETINGS:	\$15,678	\$9,156	\$9,227	(\$6,451)	-41.1%
PROFESSIONAL SERVICES:	\$0	\$2,639	\$2,795	\$2,795	N/A
OTHER MATERIAL:	\$72,346	\$70,000	\$67,619	(\$4,727)	-6.5%
OTHER SERVICES:	\$14,875	\$17,369	\$17,864	\$2,989	20.1%
PROGRAM TOTAL:	\$1,992,940	\$2,718,659	\$2,627,622	\$634,682	31.8%

Program: Combined Sewage Treatment/Tidegate and Regulator Inspection

Program Description

Significant pollution of Boston Harbor is caused by several older, local sewer systems designed to collect and transport both sewage and rain water in the same pipeline. Constructed in the late 1800's, these combined sewer systems were considered at the time to be an efficient method of dealing with stormwater and sewage within the same system. Such systems are still functioning in areas of Boston, Cambridge, Chelsea and Somerville. These combined sewer systems were built with an overflow mechanism, referred to as "combined sewer overflows (CSO's)," to accommodate the stormwater and sewage during periods of heavy rain when the combined volume exceeded the capacity of the sewer system. During dozens of storms each year, these CSO's pour untreated sewage, mixed with rain water, directly into Boston Harbor or its tributaries at more than 100 locations.

To help remedy this harbor pollution problem, MWRA has been constructing CSO treatment facilities. Two CSO treatment facilities are now operating in Somerville and East Boston. Two additional facilities are scheduled to be placed in service during FY89. During storms, combined sewage overflow is pumped or diverted to these facilities, where it is screened and disinfected before being discharged into Boston Harbor. This treatment renders the discharged wastewater less environmentally harmful. CSO treatment facilities are being employed as a temporary measure. Eventually, peak combined sewer flows will be stored and then routed to the new Deer Island plant for facility treatment when dry-weather conditions occur.

The Collections Department operates and maintains all gravity-operated CSO facilities. As part of its function, the Department inspects and maintains 108 tidegates and associated regulators. Tidegates keep tidewater from entering the CSO facilities when wastewater is being discharged into Boston Harbor. If these gates are not properly maintained, salt water can enter the sewer system, reducing the capacity of its pipes, increasing electrical and chemical costs, and upsetting the treatment process. Properly maintained regulators control dry-weather flow, preventing dry-weather discharge and backup.

Program Goals

- o to reduce a significant source of pollution of Boston Harbor and area beaches by providing effective treatment of combined sewer overflows.

Performance Objectives

- o decrease the volume of dry-weather overflows in FY89 from 10,000 to 5,000 gallons per day.
- o inspect 94 CSO tidegates quarterly; perform further tests and repairs on 5 MWRA tidegates.

Program Budget

A total FY89 budget of \$499,000 is approved for the Collection CSO's/Tidegates program. This includes \$422,000 of direct costs and \$77,000 in allocated costs from the Division Director's Office. In addition, the program includes costs allocated from the Collections Superintendent's Office of about \$0.19 million. A summary of the budget by line item is shown in Table 65.

Wages and Salaries

The FY89 budget for Wages and Salaries is \$287,076. A primary objective in FY89 for this program will be to reduce the volume of salt water inflow via Authority-owned tidegates. To accomplish this, additional positions are required to maintain and inspect the tidegates and CSO regulators. In addition, and it is the program's responsibility to operate and maintain a total of 34 new meters in FY89. The required additional positions are listed below, categorized by classification.

Tidegate Inspector (2)
Senior Engineering Aide
Instrument Technician

The FY89 cost of these new positions is \$44,000. In addition, an amount of \$24,000 has been allocated from the Superintendent's Office for the labor costs of the I/I reduction program labor.

Ongoing Maintenance

The proposed FY89 Ongoing Maintenance budget for this program is \$24,030. The major item within this category is \$13,000 for repair services for sewer line meters. In addition, \$3,000 is planned for the purchase of tidegate parts. The remainder is for miscellaneous items such as cable, rods and jacks.

New Maintenance

The FY89 budget for this line item is \$95,200. The major cost within this line item is the allocated pipeline repair costs of the I/I program. The remainder is for miscellaneous maintenance materials.

Table 66

DIVISION: SEWERAGE	COLLECTION CSO's/TIDEGATES			
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$176,009	\$321,508	\$287,076	\$111,068 63.1%
OVERTIME:	\$458	\$4,164	\$4,166	\$3,708 809.3%
FRINGE BENEFITS:	\$18,392	\$34,319	\$32,725	\$14,333 77.9%
WORKERS' COMPENSATION:	\$4,648	\$9,778	\$9,562	\$4,914 105.7%
CHEMICALS:	\$4,400	\$5,980	\$5,980	\$1,580 35.9%
UTILITIES AND ENERGY:	\$194	\$9,279	\$9,279	\$9,085 1670.9%
ONGOING MAINTENANCE:	\$8,940	\$24,030	\$24,030	\$15,090 168.8%
NEW MAINTENANCE:	\$4,682	\$98,353	\$95,200	\$90,518 1933.5%
EDUC, TRAIN, & MEETINGS:	\$336	\$1,232	\$1,222	\$885 263.1%
PROFESSIONAL SERVICES:	\$0	\$528	\$535	\$535 N/A
OTHER MATERIAL:	\$1,830	\$20,837	\$17,834	\$16,004 874.5%
OTHER SERVICES:	\$784	\$11,706	\$11,724	\$10,940 1395.0%
PROGRAM TOTAL:	\$220,673	\$541,714	\$499,333	\$278,659 126.3%

Programs: North and South System Wastewater Treatment Programs

Program Description

Under the current configuration of the MWRA Wastewater system, the Deer Island plant provides treatment for wastewater from the North Collection System and the Nut Island plant treats wastewater from the South Collection System (see the Wastewater Collections program for a description of the North and South systems). Both the Deer Island and Nut Island plants presently provide only "primary" treatment, which removes 40-60% of the pollutants from the wastewater.

As part of the harbor clean-up program, new treatment facilities will be built on Deer Island to accommodate wastewater flows from both the North and South systems. The new facilities will include both primary and secondary treatment processes that will achieve 85-90% pollutant removal. The new primary treatment facility on Deer Island will be completed in 1995 and the secondary treatment facility by 1999. The Nut Island plant will be converted to a headworks that will send flows from the South System, via a five mile, cross-harbor tunnel to the new Deer Island facilities.

An intensive, facilities improvement program is underway to rehabilitate and upgrade all components of the aging Deer Island and Nut Island plants. This work will allow the plants to meet their interim discharge limits and to operate reliably until the new primary plant is completed. The work includes renovations to the disinfection systems, remote headworks, primary sedimentation tanks, digester units and power and pumping systems.

At the same time, maintenance activities are also being intensified, which will allow plant personnel to keep equipment and processes functioning reliably around the clock. During FY89, maintenance and servicing activities will concentrate on the power and pumping systems, electrical systems, headworks units, and the primary sedimentation tanks. Specific activities will include repair or replacement of pumps and gates, as well as overhaul of engines and fuel injectors.

As part of a special process monitoring and control effort, plant personnel will maintain a continuous check on all equipment and processes to insure the proper operation of

the Deer and Nut Island treatment plants throughout the rehabilitation and new construction period.

Program Goals

- o to keep the existing Deer Island and Nut Island wastewater treatment facilities operating continuously and effectively until 1995 so that they will:
 - accommodate the wastewater flows of MWRA's North System service area;
 - provide proper removal and stabilization of pollutants to meet or exceed Court-ordered interim discharge limits.
- o to continue mutual communication and good relations with the Town of Winthrop and the City of Quincy.

Performance Objectives (North System Wastewater Treatment)

- o reduce the number of days the plant is in violation of its discharge permit from an expected 205 in FY88 to 190 in FY89.
- o limit the increase in cost per million gallons treated to 9%.
- o continue to produce an average minimum of 15 tons of compost per week.
- o reduce by 10% the time that pumping units are down for unscheduled maintenance in FY89.
- o reduce by 50% the time the headworks are down for unscheduled maintenance in FY89.
- o increase the number of tests on the treatment plant effluent.
- o utilize digester gas in the plant boilers thereby reducing fuel oil purchases.
- o Provide continuous operation each day for 24 hours.

Program Budget (North System Wastewater Treatment)

A total FY89 budget of \$15.8 million is approved for the North System Wastewater Treatment program. This amount

includes \$14.3 million of direct costs and \$1.5 million in allocated costs of the Division Director's Office. A summary of the budget by line item is presented in Table 67.

Wages and Salaries

The FY89 cost for this item is \$6.7 million including allocated costs. New positions have been added for construction coordination. and for the operation of Deer Island's extended pump and power facilities. New FY89 positions are listed below.

Construction Liaison
Power/Pump Operating Engineer (3)
Diesel Power and Pump Operator (4)
Instrument Technician

The FY89 cost of these positions is approximately \$151,000.

Overtime

For FY89, overtime is \$1.2 million. When adjusted for wage rate increases this amount is essentially a level-funding of the FY88 budget for overtime.

Chemicals

The total budgeted **Chemicals** cost for FY89 is \$1.8 million. The items and amounts in this line item are listed below.

Chlorine	\$1,789,200
Calcium Hypochlorite	10,400
Polymers	24,500
Combustion Catalyst	8,025
Microbe Bacteria	9,425
Lime	2,175
Soda Ash	<u>2,063</u>
Total	\$1,845,788

The budget for chlorine is approximately \$0.5 million lower than the FY88 budget. The projected usage of chlorine has been decreased based on an analysis of actual usage for the most recent three-year period and incorporates the latest operational data. In addition, the reduction reflects the latest forecasted price for chlorine.

Utilities

Budgeted amounts included in this line item are as follows:

Fuel Oil	\$2,095,700
Natural Gas	453
Electricity	222,000
Water/Sewer	242,998
Propane Gas	<u>487</u>
Total	\$2,561,638

The fuel oil budget is substantially higher than FY88 due to the addition of the two new generators.

Electricity is estimated to increase by \$26,000 in FY89 mostly as a result of expected rate increases. Water and Sewer costs are projected to increase by about \$220,000. This increase is the result of greater usage due to the new grit building and cooling system for the gas boosters.

Ongoing Maintenance

The major objective of this program is to keep the Deer Island wastewater treatment facility operating continuously and effectively until 1995 so that it will accommodate the wastewater flows of the MWRA's North System service area. To achieve this objective, a substantial ongoing maintenance effort must be conducted. Budgeted amounts for each of these items are shown below.

Nordberg Engine Overhaul	\$ 310,000
Winthrop Fairbanks Engine Overhaul	70,000
Fisher Porter Lab Equip Calibration Contract	94,000
Webster Sludge Overhaul	23,000
Overhaul of Digesters	28,000
Electrical Coordination for power/pump bldg. rehab	36,000
Flights, filters and chain	115,225
Engine and compressor oil	102,400
Service #8 Pump Motor	10,000
Atomic Absorption Contract (metal analyses)	10,000

Parts and Materials for Scum Collector	16,000
Pump Overhauls	69,000
Repair Engine Governors	31,862
Tools, Cleaning, and Ground Materials	165,841
Lumber, Hardware, Paint	36,430
Other Misc. Maint. Items (fitting, valves, etc.)	23,242
Air Conditioning Service Contract	3,000
Various Pumps Repairs/Replacements	<u>15,000</u>

Total	\$1,159,000
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Education, Training, and Meetings

This line item contains \$3,000 for tuition reimbursements and \$12,589 for training for various maintenance and operational functions.

Professional Services

Included in this line item is \$29,000 budgeted for the Scum Management program. The remainder of the budgeted expenses are for lube oil analysis and allocated professional services.

Other Material

Items budgeted in this line item are listed below.

Work clothes	\$ 96,000
Laboratory supplies	35,000
Safety (Scott airpacks, etc.)	15,000
Vehicle expenses	15,000
Office supplies	10,000
Head set (communications)	10,000
Blueprint rack	5,000
Miscellaneous materials	<u>23,016</u>

Total	\$209,016
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Other Services

The FY89 budget for this item is \$980,432. The major expense in this category is the contract for grit and screenings hauling. Total expense for this contract will be \$857,500 for FY89 which is a savings of almost 50 percent from FY88 as a result of more competitive bids from disposal firms.

Performance Objectives (South System Wastewater Treatment Program)

- o reduce the number of days the plant is in violation of its interim discharge permit from an estimated 49 in FY88 to 32 in FY89.
- o limit the increase in cost per million gallons treated to 12 percent.
- o reduce the number of days that pumping units are down for unscheduled maintenance from 33 in FY88 to 3 in FY89.

Program Budget (South System Wastewater Treatment)

A total FY89 budget of \$6.0 million is approved for the South System Wastewater Treatment program. This amount includes \$5.4 million of direct costs and \$0.6 million in allocated costs of the Division Director's Office. A summary of the budget by line item is presented in Table 68.

Wages and Salaries

The major goal of the South System Wastewater Treatment program is to keep the Nut Island facility operating continuously and efficiently until 1995, and to provide proper removal and stabilization of pollutants to meet or exceed interim discharge limits. No additional positions are required to carry out the goals of this program.

Overtime

The FY89 budget for Overtime is \$265,000. In addition to wage rate increases, the increase in the Operations area to provide coverage during emergencies and personnel absences. This item has been underbudgeted in previous years.

Chemicals

The major part of this item is the cost of chlorine. The chlorine expense in the FY89 budget is \$794,200. This amount reflects the latest operational data over a three-year period and updated price forecasts. In addition, the scum management program will require greater use of lime.

Utilities

Electricity costs for FY89 are projected to be \$366,850, an increase of \$122,000 from FY88. For the most part, this increase is due to the fact that FY88 electricity use at the Nut Island treatment plant was underestimated. Fuel oil included in this line item is projected to cost \$191,000 reflecting an updated analysis of current usage and price forecasts.

Ongoing Maintenance

The total FY89 budget for this line item is \$546,000. Most of the planned expenditures support the program objective of minimizing equipment failures. Areas of concentration for maintenance include re-chaining the main screens, replacing buckets, chain and bearings in the grit collection chamber, renewing pistons and bearings in the sludge pump and repairs to the sludge heater. Plant and machinery materials for these tasks are estimated to cost about \$315,000 and include pump parts (\$75,000), bearings (\$37,775), chain (\$76,000), flite shoes (\$17,000) and a chlorinator and evaporator (\$32,000).

In addition, outside services for repairs of diesel engines are estimated to cost \$35,000. The remainder of the expenses in this item are miscellaneous repair parts for equipment.

New Maintenance

The FY89 budget for this item is \$298,000. The major items under this category include tasks to:

Overhaul main pumps and motors	\$ 60,000
Line bore #1 engine	75,000
Repair air handling unit-Grit room	3,500
Replace internal phone & paging system	<u>15,465</u>
Total	\$153,965

Improved preventive maintenance and the federal mandate requiring a back-up power source require the repair materials listed below.

Main pump fuses	\$ 38,000
Engine connecting rods and heads	25,600
Liners, piston	31,000
Efficient pump repair	5,000
Aurora pump repair	<u>7,200</u>

Total	\$106,800
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Other Material

This line item includes specialized laboratory testing supplies (\$38,000), work clothes (\$29,000), and harbor sampling equipment (\$22,000). Also included are office supplies and health and safety equipment.

Other Services

The FY89 budget for this item is \$430,000. The major cost in this line item is \$390,000 for hauling and disposal of grit and screenings. The budget was based on the recently signed contract with BFI. Other items budgeted under Other Services include telephone, printing, and duplicating and equipment rentals.

Table 67

DIVISION: SEWERAGE	NORTH SYSTEM WASTEWATER TREATMENT				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$6,072,965	\$7,379,336	\$6,718,921	\$645,955	10.6%
OVERTIME:	\$1,069,564	\$1,226,002	\$1,225,970	\$156,406	14.6%
FRINGE BENEFITS:	\$684,648	\$791,980	\$769,845	\$85,197	12.4%
WORKERS' COMPENSATION:	\$160,363	\$224,420	\$223,798	\$63,436	39.6%
CHEMICALS:	\$2,366,024	\$2,546,588	\$1,845,788	(\$520,236)	-22.0%
UTILITIES AND ENERGY:	\$2,001,269	\$2,787,252	\$2,561,638	\$560,369	28.0%
ONGOING MAINTENANCE:	\$1,266,152	\$1,159,000	\$1,159,000	(\$107,152)	-8.5%
NEW MAINTENANCE:	\$90,947	\$23,847	\$23,847	(\$67,100)	-73.8%
EDUC, TRAIN, & MEETINGS	\$32,215	\$25,628	\$15,589	(\$16,626)	-51.6%
PROFESSIONAL SERVICES:	\$10,600	\$57,008	\$56,904	\$46,304	436.8%
OTHER MATERIAL:	\$192,335	\$209,090	\$209,016	\$16,682	8.7%
OTHER SERVICES:	\$1,490,290	\$980,760	\$980,432	(\$509,858)	-34.2%
PROGRAM TOTAL:	\$15,437,371	\$17,410,911	\$15,790,748	\$353,377	2.3%

Table 68

DIVISION: SEWERAGE	SOUTH SYSTEM WASTEWATER TREATMENT				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$2,296,651	\$2,767,478	\$2,470,339	\$173,688	7.6%
OVERTIME:	\$186,407	\$265,927	\$265,910	\$79,503	42.6%
FRINGE BENEFITS:	\$243,359	\$298,076	\$284,271	\$40,912	16.8%
WORKERS' COMPENSATION:	\$60,645	\$84,165	\$82,284	\$21,638	35.7%
CHEMICALS:	\$783,409	\$989,533	\$824,172	\$40,764	5.2%
UTILITIES AND ENERGY:	\$494,660	\$651,982	\$624,272	\$129,612	26.2%
ONGOING MAINTENANCE:	\$570,627	\$675,896	\$546,146	(\$24,481)	-4.3%
NEW MAINTENANCE:	\$3,161	\$297,733	\$297,733	\$294,572	9320.2%
EDUC, TRAIN, & MEETINGS	\$5,595	\$6,173	\$6,151	\$556	9.9%
PROFESSIONAL SERVICES:	\$0	\$6,594	\$6,537	\$6,537	N/A
OTHER MATERIAL:	\$66,249	\$118,058	\$118,017	\$51,768	78.1%
OTHER SERVICES:	\$383,799	\$429,818	\$429,638	\$45,839	11.9%
PROGRAM TOTAL:	\$5,094,562	\$6,591,433	\$5,955,470	\$860,908	16.9%

Program: Clinton Wastewater Treatment Program

Program Description

Legislation enacted in July, 1987, requires the MWRA to own, operate, and improve the Town of Clinton Wastewater Treatment Facility. Built in 1955, this facility treats about 2,000,000 gallons of wastewater daily from Clinton and a small portion of neighboring Lancaster. In compliance with the July, 1987 legislation, the MWRA is currently upgrading and rehabilitating the major components of the aging Clinton facility. This interim work will allow the plant to meet its discharge permit requirements and to operate effectively until construction of a new Clinton facility is completed in 1992.

The rehabilitation and construction projects at the Clinton Treatment Plant will necessitate the upgrading of staff skills to properly operate the new facility. The industrial waste monitoring and enforcement activities of the Toxics Reduction and Control Program will also be expanded to include the communities served by the Clinton wastewater treatment facility.

Program Goals

- o to keep the existing Clinton wastewater treatment facility operating in a cost-effective manner until a new wastewater treatment facility is constructed.

Performance Objectives

- o track the number of days and parameters by which the plant is in violation of its NPDES permit, not to exceed the FY88 actual of 134 violation parameters.
- o rehabilitate the digester to an acceptable level resulting in adequate sludge digester efficiency.
- o track the cost per million gallons treated for use as an FY90 baseline.
- o institute preventive maintenance measures to reduce down time of pumps and sedimentation tanks.

Program Budget

A total FY89 budget of \$0.6 million is approved for the Clinton Wastewater Treatment program. This includes \$0.5

million of direct costs and \$0.1 million in allocated costs of the Division Director's Office. A summary of the budget by line item is presented in Table 69.

Wages and Salaries

The FY89 budget for this line item is \$366,000. The prime goal for this program is to keep the existing Clinton treatment facility operating as effectively as possible until a new wastewater treatment facility is constructed. New initiatives for improved plant maintenance and operations require the addition of a clerical position to type and process purchase orders and invoices. The position proposed is that of a senior clerk/typist with a FY89 cost of \$17,000.

New Maintenance

The FY89 budget for this line item is \$126,200. Budgeted amounts for plant and machinery materials include the items listed below.

Influent pump	\$ 8,000
Effluent pump/motor	5,000
Aluminum railing	13,000
Chain and sprockets	10,000
Slide gate stand and operator	<u>5,000</u>
Total	\$ 41,000

Outside services associated with plant maintenance include:

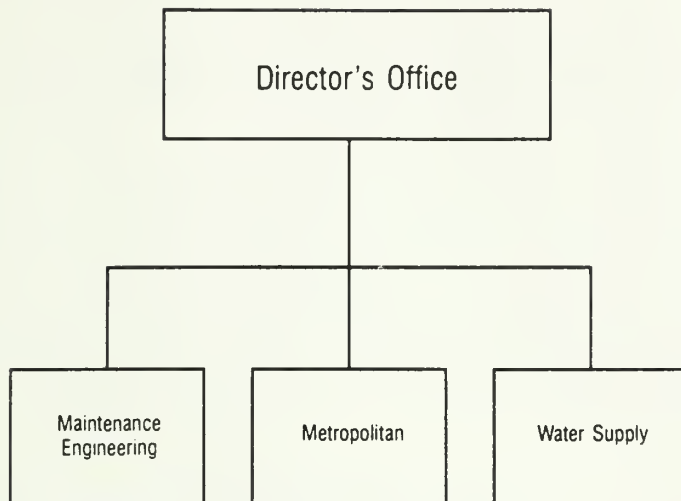
Replace PVC gas piping in digesters	\$ 10,000
Patch concrete in primary and secondary tanks	10,000
Install aluminum railing on walkway	7,000
Inspect/calibrate influent flow	
Indicator/recorder	1,000
Cleaning and groundskeeping services	3,200
Miscellaneous equipment services	<u>4,000</u>
Total	\$ 35,200

An additional \$50,000 for repair of the entire sewer line leading into the plant is also included under New Maintenance.

DIVISION: SEWERAGE	CLINTON			
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$319,264	\$365,812	\$361,122	\$41,858 13.1%
OVERTIME:	\$27,917	\$27,842	\$22,858	(\$5,059) -18.1%
FRINGE BENEFITS:	\$34,290	\$38,911	\$40,934	\$6,645 19.4%
WORKERS' COMPENSATION:	\$8,430	\$11,125	\$12,028	\$3,598 42.7%
CHEMICALS:	\$6,645	\$7,930	\$7,930	\$1,285 19.3%
UTILITIES AND ENERGY:	\$2,232	\$2,980	\$2,980	\$748 33.5%
ONGOING MAINTENANCE:	\$15,828	\$15,800	\$15,800	(\$28) -0.2%
NEW MAINTENANCE:	\$23,214	\$126,200	\$126,200	\$102,986 443.6%
EDUC, TRAIN, & MEETINGS	\$290	\$230	\$249	(\$41) -14.1%
PROFESSIONAL SERVICES:	\$0	\$613	\$664	\$664 N/A
OTHER MATERIAL:	\$8,469	\$18,877	\$18,913	\$10,444 123.3%
OTHER SERVICES:	\$6,283	\$11,336	\$11,498	\$5,215 83.0%
PROGRAM TOTAL:	\$452,861	\$627,656	\$621,176	\$168,316 37.2%

Waterworks





WATERWORKS DIVISION

Mission Statement

The Waterworks Division ensures the continuous delivery of a sufficient supply of high-quality water to the 46 cities and towns served by the Massachusetts Water Resources Authority. This Division operates and maintains the MWRA's water transmission, power generation, storage, distribution, and pumping systems which convey water from the Quabbin Reservoir to the local water systems of MWRA communities. Supporting these functions are ongoing programs to keep all facilities in peak operating condition, to improve metering and flow accountability, and to ensure the quality and purity of water delivered throughout the MWRA's system. The Division also conducts a series of specialized activities to promote water conservation.

Programs and Organizational Units

The Waterworks Division is organized into three departments and the Division Director's Office. The Maintenance Engineering Department oversees two programs: Technical Support and Management of Special Programs. Three programs are included in the Metropolitan Department: Potable Water Pumping, Metropolitan Area Water Distribution, and Meter and Pumping Station Instrumentation Maintenance. The Water Supply Department is responsible for two programs: Water Quality Assurance and Water Transmission and Power Generation. Each of the three departments has an administrative cost center, the costs of which have been allocated to the respective programs. Table 70 outlines the relationship between the Division's organization units and programs.

Major Division Objectives

The Waterworks Division supplies an estimated 2.5 million people with water every day. This operation requires three supply reservoirs, ten distribution reservoirs, twelve pumping stations, more than 250 miles of pipeline, and 56 miles of tunnel. The system handles 300 million gallons daily. This operation requires constant surveillance in order to assure continuous service.

A major focus of the Waterworks Division is water conservation. This broad effort has several elements. In the Maintenance Engineering Department, FY89 activities include the marketing of water conservation to businesses and

households and the development of leakage regulations and municipal leak survey training. In the Metropolitan Department there are leak survey crews which use sonic devices to detect leaks in MWRA pipelines. Leaks are then repaired as part of the Division's ongoing maintenance effort. The overall aim of this program is to reduce the demand for MWRA water to within the safe yield of existing supplies.

Continued maintenance and rehabilitation of the aging water system is also a major goal in FY89. Although the waterworks system is reliable and well designed, many pumping stations and parts of the system infrastructure were built around the turn of the century. For instance, the Meter Maintenance Section repairs and rehabilitates mechanical meters that are no longer produced. The installation of new telemetric meters is not yet completed.

Division Budget Summary

The Waterworks Division budget is \$19.8 million in FY89. This amount represents a 21.5 percent increase from the FY88 budget. A summary of the budget for each program is found in Table 71. Major cost increases reflect the previously stated priorities of Demand Management through water conservation, leak detection and system maintenance. The program budgets in these areas increased substantially over FY88.

The budget for wages and salaries is an increase of 18.8 percent over FY88. All costs of the Division Director's Office have been allocated to the Division's seven programs based upon the ratio of each program's direct costs to the total direct costs of all programs. Fringe Benefits and Workers' Compensation for the Division, which are centrally budgeted in the Director's Office, have been allocated in proportion to the Wages and Salaries of each program. All allocated costs of the Director's Office are presented in Table 72. The MWRA's collective bargaining agreements affect more than 80 percent of all Waterworks employees and the majority have yearly increases of 10-14 percent extending through FY89. In addition, there are 24 new positions for the Waterworks Division in FY89 as shown in Table 74.

Other major cost increases include the following: Chemicals up 123.8 percent due primarily to the tripling of the price of sodium hydroxide; Utilities and Energy up 24.9 percent due primarily to a shift from diesel to electric pumps in

the Metropolitan Pumping program; Ongoing Maintenance up 9.7 percent to reflect the Division's increased maintenance in all programs; and Other Materials, with a 33.3 percent increase found in safety items, work clothes, and promotional materials for the Division's water conservation programs. A summary of the Waterworks Division's budget by line item is presented in Table 73.

Table 70

WATERWORKS DIVISION
MATRIX OF PROGRAMS AND ORGANIZATIONAL UNITS

PROGRAM	DIRECTOR'S OFFICE	MAINTENANCE ENGINEERING	METROPOLITAN DEPARTMENT	WATER SUPPLY DEPARTMENT
MANAGEMENT OF SPECIAL PROGRAMS	X	X		
TECHNICAL SUPPORT	X	X		
POTABLE WATER PUMPING	X		X	
METROPOLITAN AREA WATER DISTRIBUTION	X		X	
METER CALIBRATION & INSTRUMENTATION MAINTENANCE	Y		X	
WATER TRANSMISSION & POWER GENERATION	X			X
WATER QUALITY ASSURANCE	X			X

DIVISION: WATERWORKS	DIVISION SUMMARY BY PROGRAM				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
PROGRAMS					
MANAGEMENT OF SPECIAL PROGRAMS	\$1,716,506	\$2,144,502	\$1,823,580	\$107,074	6.2%
TECHNICAL SUPPORT	642,361	1,066,743	967,567	325,206	50.6%
POTABLE WATER PUMPING	3,609,571	4,529,910	4,246,281	636,709	17.6%
METRO AREA WATER DISTRIBUTION	4,038,746	5,009,217	4,404,014	365,268	9.0%
METER CALIBRATION/MAINTENANCE	684,101	1,046,883	1,023,815	339,714	49.7%
WATER TRANSMISSION & POWER GENERATION	3,317,193	4,204,104	3,808,738	491,545	14.8%
WATER QUALITY ASSURANCE	2,288,934	2,360,088	3,521,796	1,232,863	53.9%
DIVISION TOTAL:	\$16,297,413	\$20,361,447	\$19,795,792	\$3,498,379	21.5%

Table 72

Waterworks Division Allocated Costs

The Division Directors Office provides policy guidance and Administrative Support to the Waterworks Division. Specific functions of the Department include personnel and payroll administration, accounts payable and statistical records. The responsibilities of the Statistical Branch are increasing in FY89 due to the recent placement (November, FY88) of the Water Meter Telemetry System Control Processor at the MWRA. Previously, the computer had been located at the MDC. In FY89, computer upgrades and maintenance are planned.

Wages and Salaries \$ 727,938

One new position has been added in FY89, that of Administrative Assistant at an annual salary of \$25,000. This new hire will report directly to the Director of Administration and provide support primarily in the areas of collective bargaining, budgeting and coordination with other MWRA offices and Waterwork's field offices. Estimated wage increases for all Division employees are also included in this line item.

Overtime \$ 5,772

Fringe Benefits and Workers' Compensation \$1,418,537

These costs for the entire Division are centralized in this department. They reflect the increase in new hires and union settlement impacts.

Ongoing Maintenance

The majority of the costs in this line item are associated with the maintenance and upgrade of the Water Meter Telemetry System Processor.

Printing supplies	\$ 5,000
Central computer maintenance	60,000
Central computer system upgrades	15,000
Fire suppression system maintenance	1,000
Air conditioning system maintenance	<u>1,000</u>
	\$ 82,000

Education, Training and Meetings

This budget covers attendance at meetings with federal, state, private sector, and community representatives and seminars sponsored by the New England Waterworks Association and the Association of Metropolitan Water Agencies.

Professional meetings and seminars	\$ 20,100
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Other Material

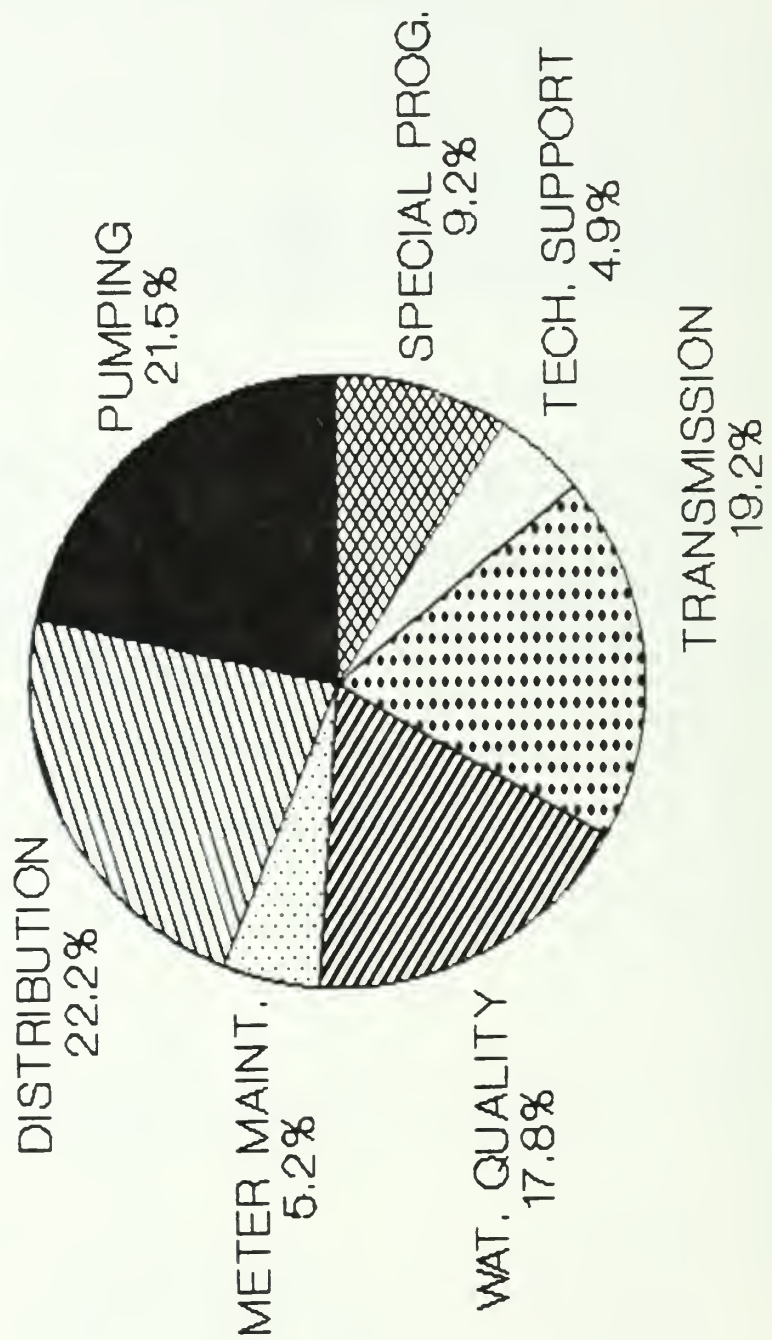
Office supplies	\$ 1,000
Health and safety supplies	2,000
Office equipment and furniture	4,000
Vehicle expense	<u>3,140</u>
	\$ 10,140

Other Services

The following is a list of items included in this budget.
The majority pertain to membership in industry associations.

Safety Committee	\$ 5,000
American Waterworks Research Foundation	50,500
Association of Metropolitan Water Agencies	7,500
American & New England Waterworks Assoc.	10,000
Professional Licenses Reimbursement (P-4)	12,000
Courier Services	5,400
Leased Communication Equipment	<u>8,000</u>
Total	\$ 98,400

WATERWORKS DIVISION PROPORTION OF CURRENT EXPENSE BUDGET BY PROGRAM IN FY89



WATERWORKS DIVISION PROGRAM BUDGET COMPARISON FY88 - FY89

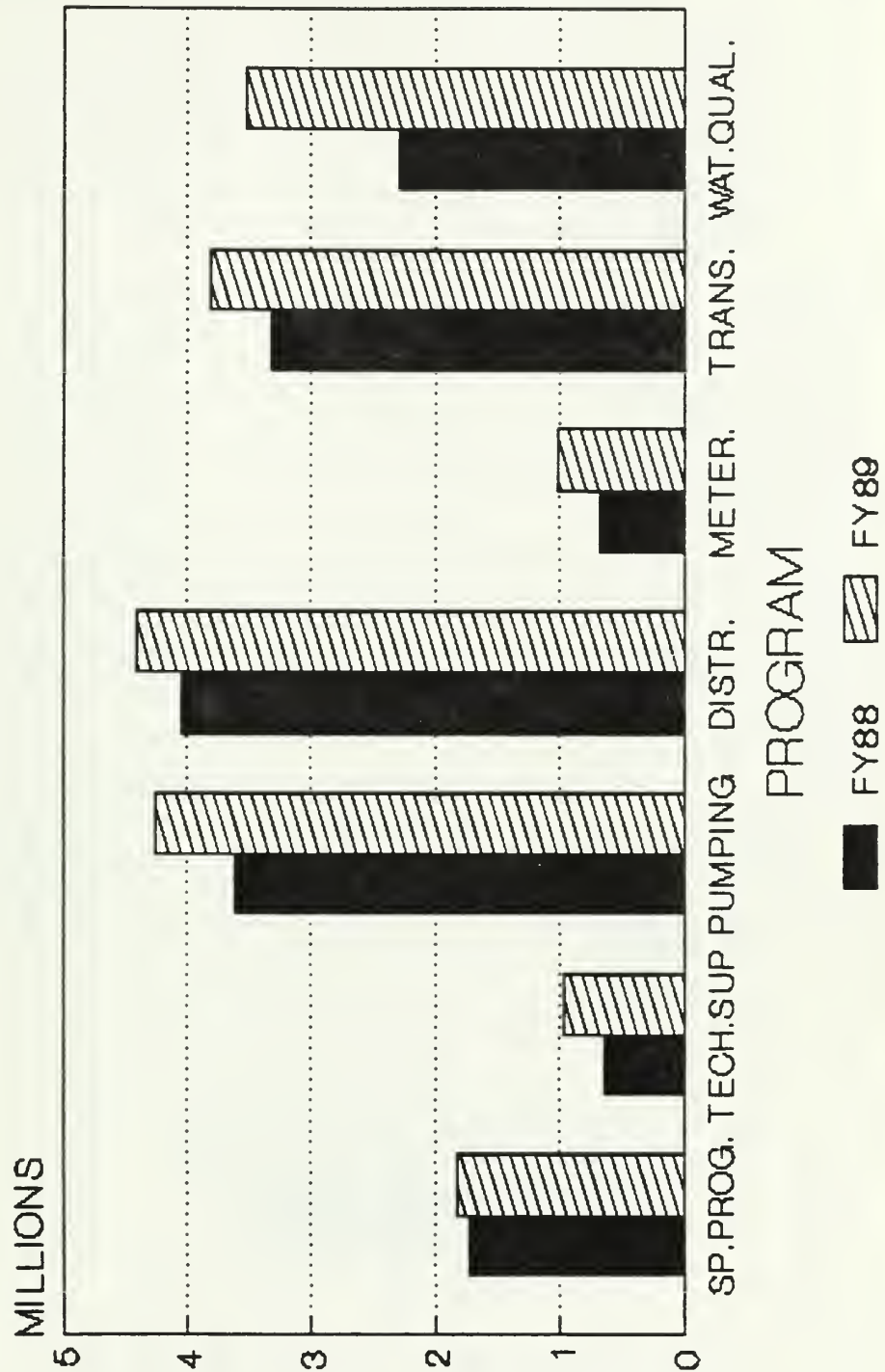


Table 73

DIVISION: WATERWORKS	PROGRAM SUMMARY BY LINE ITEM			
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
EXPENSE LINE ITEM:				
WAGES AND SALARIES:	\$9,497,519	\$12,593,527	\$11,283,823	\$1,786,304 18.8%
OVERTIME:	446,990	479,752	479,087	32,096 7.2%
FRINGE BENEFITS:	1,071,646	1,434,765	1,238,230	166,584 15.5%
WORKERS' COMPENSATION:	186,200	199,200	199,200	13,000 7.0%
CHEMICALS:	970,738	999,930	2,172,843	1,202,105 123.8%
UTILITIES AND ENERGY:	1,286,487	1,552,121	1,606,456	319,970 24.9%
ONGOING MAINTENANCE:	683,972	775,180	750,180	66,208 9.7%
NEW MAINTENANCE:	356,030	304,100	264,100	(91,930) -25.8%
EDUC, TRAIN, & MEETINGS:	62,090	81,600	76,600	14,510 23.4%
PROFESSIONAL SERVICES:	850,850	863,940	703,940	(146,910) -17.3%
OTHER MATERIAL:	388,212	517,609	517,609	129,397 33.3%
OTHER SERVICES:	496,679	559,724	503,724	7,045 1.4%
DIVISION TOTAL:	\$16,297,413	\$20,361,447	\$19,795,792	\$3,498,379 21.5%

WATERWORKS DIVISION SUMMARY OF DIRECT EXPENSES FY88 - FY89 COMPARISON

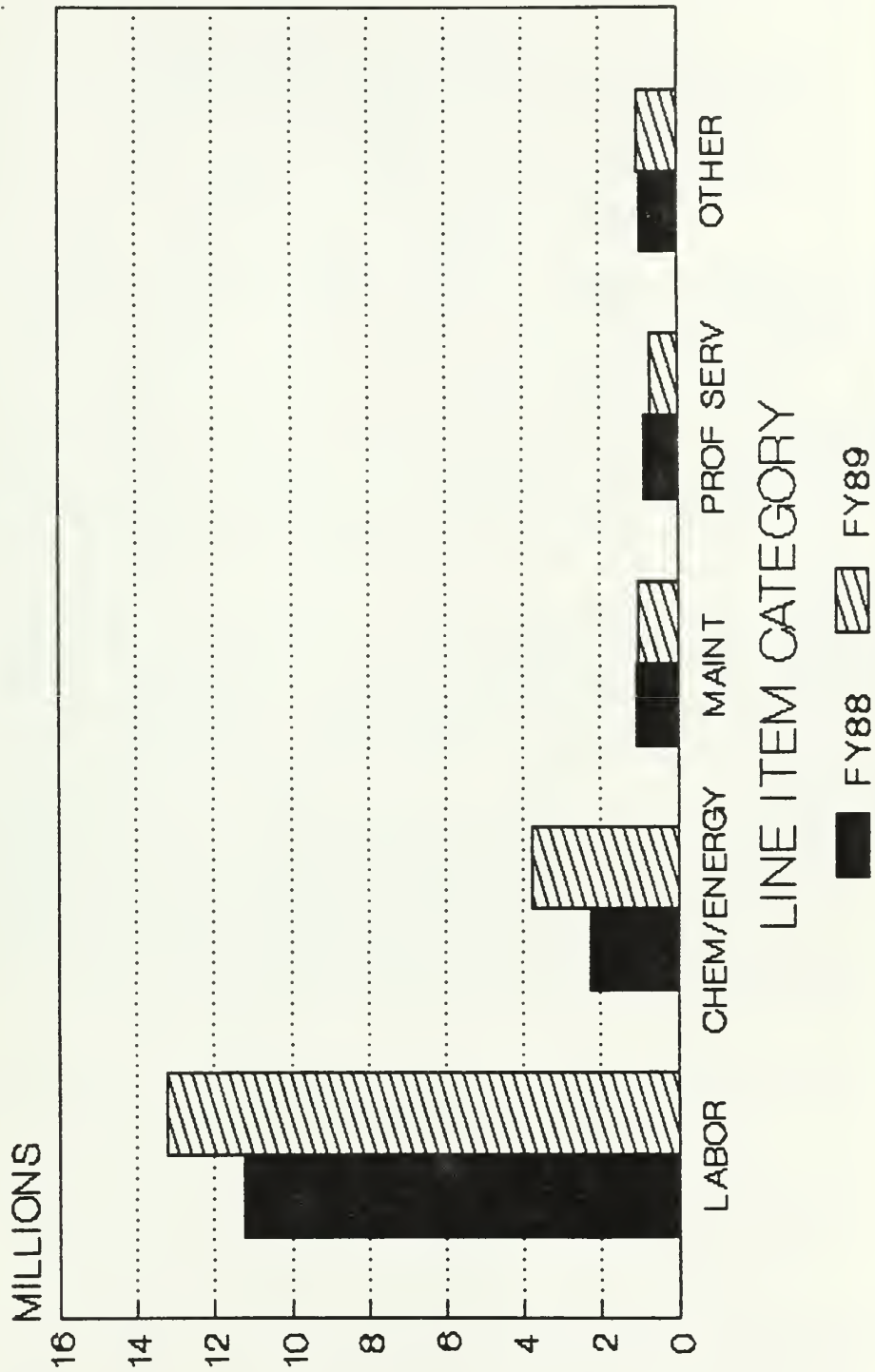


Table 74

MASSACHUSETTS WATER RESOURCES AUTHORITY
 FY89 CURRENT EXPENSE BUDGET
 PLANNED STAFFING LEVELS BY COST CENTER

WATERWORKS DIVISION

DEPARTMENT/COST CENTER	POSITIONS IN FY88 BUDGET	POSITIONS TRANSFERRED IN FY88	POSITIONS TRANSFERRED TO FY89	POSITIONS ADDED IN FY88	PLANNED POSITIONS 6/30/88	POSITIONS TO BE FILLED IN FY89	PROPOSED ATTRITIONS	PLANNED POSITIONS 6/30/89
DIRECTOR'S OFFICE	15	-	-	-	15	1	-	16
ENGINEERING								
ADMINISTRATION	4	(2)	-	-	2		-	2
PROGRAM MANAGEMENT	15	2	-	1	18	4	-	22
TECHNICAL SUPPORT	11	1	-1	-	11	9	-	20
METROPOLITAN								
ADMINISTRATION	3	-	-	-	3		-	3
PUMPING	74	-	-4	-	70	7	-	77
DISTRIBUTION	136	(1)	-4	-	131	4	-11	124
MAINTENANCE	20	-	-	-	20	4	-	24
WATER SUPPLY								
ADMINISTRATION	2	-	-	-	2	1	-	3
TRANSMISSION	115	(3)	-8	-	104	11	-	115
WATER QUALITY	28	-	-1	-	27	1	-	28
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DIVISION TOTAL	423	(3)	(18)	1	403	42	-11	434
	=====	=====	=====	=====	=====	=====	=====	=====

Program: Management of Special Programs

Program Description

This multi-faceted program of the Maintenance Engineering Department manages a series of specialized activities designed to promote water conservation and to reduce the unnecessary loss of millions of gallons of water throughout the water distribution systems of the MWRA and its user communities.

Leak Detection efforts, encompassing all 46 MWRA communities, will identify repair work required to reduce leakage and unaccounted-for water. All 6,700 miles of MWRA community pipes are being surveyed to detect leaks. Meters will be tested, as needed, to assure the accurate monitoring, tracking, and accountability of water usage. In addition, the staff is preparing leakage regulations requiring continuing leak surveys and repairs by communities and is providing leak survey training and technical assistance for local public works personnel.

Another major phase of the MWRA's extensive water conservation effort involves a series of **Demand Management** projects targeted to reach residential users; industrial, commercial, and institutional consumers; and students. These projects involve a variety of public information, educational, and community outreach activities.

A number of **Metering and Monitoring** projects will improve metering and flow accountability, facilitate water system operations, and bolster system-wide reliability. More advanced, centralized equipment will allow the staff to monitor more closely the status of the water system and to take immediate action to avoid any emergency in delivering an adequate water supply.

A **Drought Management Plan**, drafted in FY88, will develop a framework for special supply improvement and demand-curtailement actions to respond to drought conditions. Because of the need for the involvement and cooperation of communities and other state agencies, an extended review process will precede adoption of a Drought Management Plan by the MWRA's Board of Directors in FY89. The staff will then monitor the status of the MWRA's water supply and implement recommendations detailed in the Drought Management Plan when appropriate. Leak detection, demand management, metering and monitoring, and drought management activities are part of MWRA's Long-Range Water Supply Program, which is

determining future water needs and developing strategies to meet those needs. Other elements of the Long Range Water Supply program are managed by the Engineering and Executive Divisions.

Program Goals

- o To provide a sufficient and reliable water supply for all consumers throughout the MWRA service area by:
 - reducing unnecessary and wasteful water use.
 - reducing the total water use from 334 million gallons per day to 300 million gallons per day, the system's "safe-yield" capacity.
 - continually monitoring the status of the Authority's water supply and implementing immediate action to prevent water supply emergencies.
 - more effectively planning and assessing the need for repairs and improvements to the water system infrastructure.

Performance Objectives

By the end of FY89, the MWRA is aiming to reduce the total water supplied system-wide from its current level of 334 million gallons per day. During the past two years, significant steps have been taken that will help to achieve this objective. In FY88, 1,500 miles of community pipelines were surveyed for leaks, and 10 industrial audits were conducted to foster more efficient water use. Previously, no such surveys or audits were conducted by the MWRA. To continue these efforts in FY89, Maintenance Engineering is planning to:

- o survey 5,200 miles of community pipelines for leakage, a 350% increase over FY88.
- o conduct three leak detection training workshops for local public works employees.
- o conduct 25 industrial water audits of representative industries including recommended conservation measures estimated cost savings and development of technical conservation manuals for specific industries.

- o conduct a domestic device retrofit and public information program in four pilot communities to increase public awareness of the need for water conservation.
- o distribute elementary and junior high school MWRA curriculum materials to all public schools in the MWRA service area.
- o conduct 30 teacher training workshops designed to encourage the use of MWRA water conservation curriculum in elementary and junior high schools.
- o develop MWRA water conservation curriculum for use in high schools.

Program Budget

In FY89 there is a \$1.8 million budget for the Management of Special Programs. Of that total, \$.25 million are costs allocated from the Division and Department Directors' offices. A summary of the budget by line item is presented in Table 75.

Wages and Salaries

Four new positions are approved for this program in FY89. They are as follows:

Project Manager (Residential)
 Program Assistant (School)
 Staff Engineer (Nondomestic)
 Secretary II

The FY89 cost of these new positions is \$75,333. The new position for the Residential program will facilitate design and implementation of projects for multi-family and single family residential conservation. The Staff Engineer (Non-domestic) will strengthen in-house ability to provide technical assistance to industrial, institutional and commercial users. The School Program Assistant will aid in all aspects of the educational conservation program.

Education, Training and Meetings

In addition to \$2,400 for tuition reimbursement, this line item includes \$6,600 in funding for national and regional conservation committee meetings and conservation workshops.

Professional Services

The budget for this line item includes direct costs of \$555,000 as outlined below.

Leak survey training	\$ 50,000
Engineering services for water conservation	25,000
Water conservation design consultant	165,000
School education consultant	100,000
Market survey consultant	50,000
Nondomestic consultant	<u>165,000</u>
Total	\$555,000

Many of these services represent the continuation of existing contracts. New priorities for FY89 include leak survey training and the school education consultant.

Other Materials and Services

All of the costs in these two line items pertain to the MWRA's public awareness efforts. They include the following:

Audio-visual equipment	\$ 8,100
Vehicle expense	6,692
Water conservation kit materials	25,000
Books and reference materials	1,000
School kit materials	5,000
Photographic materials and services	10,000
Printing for residential, industrial and school programs	125,000
Water conservation advertisements	60,000
Allocated costs	<u>10,775</u>
Total	\$251,567

Table 75

DIVISION: WATERWORKS	MANAGEMENT OF SPECIAL PROGRAMS				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$599,342	\$1,035,506	\$882,861	\$283,519	47.3%
OVERTIME:	4,231	5,284	4,524	294	6.9%
FRINGE BENEFITS:	66,617	116,545	95,528	28,911	43.4%
WORKERS' COMPENSATION:	11,750	16,379	15,586	3,835	32.6%
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	0	0	0	0	N/A
ONGOING MAINTENANCE:	7,732	8,800	7,642	(90)	-1.2%
NEW MAINTENANCE:	70,000	0	0	(70,000)	-100.0%
EDUC, TRAIN, & MEETINGS:	8,744	12,157	10,873	2,129	24.4%
PROFESSIONAL SERVICES:	732,000	655,000	555,000	(177,000)	-24.2%
OTHER MATERIAL:	2,096	51,554	51,397	49,301	2351.6%
OTHER SERVICES:	213,994	243,276	200,170	(13,824)	-6.5%
PROGRAM TOTAL:	\$1,716,506	\$2,144,502	\$1,823,580	\$107,074	6.2%

Program: Technical Support

Program Description

The Technical Support Section of the Maintenance Engineering Department provides the design, engineering, drafting and technical support services necessary to maintain and repair MWRA water systems. These activities support a variety of functions of the Water Transmission and Power Generation, Potable Water Pumping, and Metropolitan Area Water Distribution programs.

In most cases, the in-house Technical Support staff eliminates the need for outside consultants, enabling major maintenance and repair projects to be carried out more quickly and economically. The program is currently focusing on repairing and rehabilitating aging and deteriorating structures and equipment and upgrading facilities to current operating and safety standards. Some of the specific projects planned for FY89 include Echo Bridge Rehabilitation, Nonantum Road Pipe Replacement, PCB Electric Equipment Improvement, Asbestos Abatement Project, and the Rehabilitation of Existing Facilities.

Program Goals

- o to perform all maintenance engineering functions required to keep transmission, power generation, storage, distribution, and pumping facilities in prime operating condition.

Performance Objectives

During FY89, the Technical Support staff plans to:

- o increase the total value of work designed in-house from approximately \$1 million in FY88 to \$5.4 million in FY89.
- o reduce the project schedule variance on capital work performed in-house by one month.
- o reduce the budget variances on work performed by 10 percent.
- o track the response time for the resolution of safety issues by the Safety Committee.

- o track responses to requests for technical assistance from operating departments.
- o assist in the development of a preventive maintenance program to reduce costly emergency repairs and improve system reliability.

In addition, Technical Support personnel plan to continue the development of operations, maintenance, and safety manuals started in FY88. These manuals are designed to improve worker efficiency and system performance.

Program Budget

The Technical Support Program has a \$.97 million budget for FY89. This includes \$.8 million in direct costs and \$0.16 million allocated from the Division and Department Director's offices. A summary of the budget by line item is presented in Table 76.

Wages and Salaries

There are a total of eight new positions in FY89 for this program. They are as follows:

- Senior Staff Engineer, Civil
- Project Engineer, Civil (2)
- Project Engineer, Mechanical
- Project Engineer, Electrical
- Engineering Assistants (2)
- Design Drafter

The in-house design of major maintenance projects is projected to increase by 200 percent in FY89. The additional positions will allow the Division to conduct this expanded maintenance program. Some specific rehabilitation projects include Glenwood Yard, Hyde Park Pumping Station, Chestnut Hill High and Low Service, Underground Storage Tank Replacement and Sluice Gate Rehabilitation (Phase II). In addition, the new hires will assist in correcting safety problems at Waterworks facilities. The total cost of these new positions in FY89 is \$180,148.

New Maintenance

The \$70,000 budget covers three major items: the cleaning of an oil separator drain line at the Spot Pond Pumping Station (\$15,000); the replacement of a heating furnace at the

Spring St. Pumping Station (\$15,000); and the maintenance services required to remedy emergency safety related problems (\$40,000).

Education, Training and Meetings

This line item covers tuition reimbursement (\$6,000) and attendance at technical conferences related to Division responsibilities (\$8,000).

Professional Services

Lab and Testing Services covers the cost of materials testing required for construction contracts and resolution of various emergency and safety issues (\$10,000).

Other Material

The following items are included in this budget:

Electric testing equipment	\$ 2,500
Health and safety supplies	2,500
Office and drafting equipment	42,450
Vehicle expense	5,970
Technical specs and publications	<u>1,000</u>
Total	\$ 54,420

Other Services

The \$20,000 included in this line item covers the cost of the printing required for engineering studies and construction contracts.

Table 76

DIVISION: WATERWORKS	TECHNICAL SUPPORT				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$394,478	\$720,867	\$690,068	\$295,590	74.9%
OVERTIME:	7,384	11,602	11,592	4,209	57.0%
FRINGE BENEFITS:	43,913	81,346	74,869	30,956	70.5%
WORKERS' COMPENSATION:	7,734	11,402	12,182	4,448	57.5%
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	0	0	0	0	N/A
ONGOING MAINTENANCE:	2,789	4,262	3,930	1,142	40.9%
NEW MAINTENANCE:	146,100	70,000	70,000	(76,100)	-52.1%
EDUC, TRAIN, & MEETINGS:	5,814	16,045	14,963	9,149	157.4%
PROFESSIONAL SERVICES:	10,000	70,000	10,000	0	0.0%
OTHER MATERIAL:	1,381	55,273	55,246	53,865	3900.3%
OTHER SERVICES:	22,768	25,946	24,716	1,948	8.6%
PROGRAM TOTAL:	\$642,361	\$1,066,743	\$967,567	\$325,206	50.6%

Program: Potable Water Pumping

Program Description

The Potable Water Pumping Program of the Metropolitan Department allows the MWRA to provide water to consumers in higher elevation service areas. To accomplish this task, water must be pumped into higher-elevation systems, then maintained at proper elevation in seven distribution reservoirs and six large vertical pipes, called "standpipes". This operation is accomplished by a system of 10 pumping stations: four manually operated around the clock, two remotely operated, and four automatically operated. To keep this system running continuously and efficiently, department workers carry out ongoing monitoring activities which include daily checking of elevation levels at the tanks, standpipes and reservoirs. Program maintenance activities include a process known as pump packing which prevents water leakage and provides more efficient pump operation.

Program Goals

- o to operate a reliable, cost-effective pumping system capable of continually maintaining water pressure delivery standards.

Performance Objectives

During FY89, the staff of the Metropolitan Department will be working to maintain reliable service to consumers by continuously providing sufficient water pressure in high-elevation areas, even during periods of peak water usage. To accomplish this delivery standard, the program aims to:

- o keep all pumping stations functioning at peak efficiency and operating, on the average, 90% of the time as required to maintain sufficient pumping capacity.
- o maintain proper water levels in standpipes and reservoirs 100% of the time.
- o maintain uninterrupted daily pumping of 60 to 75 million gallons of water (range based on seasonal fluctuations).

Program Budget

A \$4.2 million budget has been approved for the Potable Water Pumping program. This amount includes \$0.7 million in allocated costs from the Director's Office. A summary of the budget by line item is presented in Table 77.

Wages and Salaries

This line item increased from \$1.7 million in FY88 to \$2.1 million in FY89. The increase is primarily due to wage increases and budgeting of full year costs for employees hired during FY88. In addition, three new Station Attendant II positions are included in the FY89 budget. These positions reflect the continuing implementation of a safety policy requiring two-person shifts at pumping stations. The total cost of these three new positions is \$20,604 for FY89.

Utilities and Energy

This program is the heaviest user of fuel oil and electricity in the Division. The FY89 budget is \$1.5 million, compared to a budget of \$1.2 million in FY88. In addition to increases in energy prices, Authority usage has increased and changed. Usage differences are due to the larger volume of water being pumped and an increased use of electric rather than diesel pumping units.

Ongoing Maintenance

Direct costs budgeted in this line item are \$103,100 and include the following items:

Cleaning/ground/building material and plant service	\$ 19,700
Lubricating & hydraulic oil	15,000
Misc. hardware, plumbing, elect. supplies	22,900
Fuel analysis	2,000
Recording pens & charts for pumping stations	2,000
Service to heating boilers, electrical and fuel injection equipment	27,500
Metal spraying of shafts	3,000
Service to parco valves	3,200
Cleanup and removal of oil	<u>7,800</u>
Total	\$103,100

New Maintenance

The \$15,000 budget covers the cost of spare parts.

Education, Training and Meetings

The \$8,511 budget covers the following items: \$1,500 for tuition reimbursement, \$1,900 for training, and \$5,111 in allocated costs.

Professional Services

A total of \$9,340 is budgeted for security for pumping stations that are not continuously staffed.

Other Material

In addition to miscellaneous office supplies, health and safety equipment and vehicle expenses, the major Other Materials cost is for work clothes, at \$27,6000.

Other Services

The total direct budget for this line item is \$19,624 and covers duplicating, telephone and freight charges. The remaining allocated costs from the Office of the Director reflect the cost of membership in the American Waterworks Research Foundation.

Table 77

DIVISION: WATERWORKS	POTABLE WATER PUMPING				
EXPENSE LINE ITEM:	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
WAGES AND SALARIES:	\$1,729,079	\$2,379,919	\$2,119,467	\$390,388	22.6%
OVERTIME:	156,670	148,546	148,536	(8,134)	-5.2%
FRINGE BENEFITS:	198,129	274,092	235,556	37,427	18.9%
WORKERS' COMPENSATION:	33,899	37,645	37,416	3,517	10.4%
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	1,176,910	1,399,441	1,460,466	283,556	24.1%
ONGOING MAINTENANCE:	128,416	121,580	120,858	(7,558)	-5.9%
NEW MAINTENANCE:	37,000	55,000	15,000	(22,000)	-59.5%
EDUC, TRAIN, & MEETINGS:	10,323	8,668	8,511	(1,813)	-17.6%
PROFESSIONAL SERVICES:	9,350	9,340	9,340	(10)	-0.1%
OTHER MATERIAL:	58,641	50,274	50,198	(8,443)	-14.4%
OTHER SERVICES:	71,154	45,405	40,934	(30,221)	-42.5%
PROGRAM TOTAL:	\$3,609,571	\$4,529,910	\$4,246,281	\$636,709	17.6%

Program: Metropolitan Area Water Distribution

Program Description

The distribution section of the Metropolitan Department operates and maintains a system of waterworks facilities that delivers 256 million gallons of water each day to more than 1.8 million consumers in the MWRA's metropolitan service area. These facilities include 265 miles of pipeline, 18 miles of deep-rock tunnels, 7 shafts, 7 distribution reservoirs, 6 standpipes, associated valves and pressure regulators, 25 buildings and 60 acres of grounds. One important aspect of distribution system maintenance is leak detection and repair. The leak detection effort is conducted by three crews working with sonic devices that can "hear" water leaking from underground pipes.

Program Goals

- o to operate a reliable and efficient water distribution system that:
 - continuously delivers water to all parts of the MWRA metropolitan service area.
 - minimizes water loss throughout the system.
 - meets operating and maintenance standards of the waterworks industry.

Performance Objectives

A comprehensive program for inspecting, repairing, and maintaining the MWRA's extensive water distribution system is already well underway. In FY87, approximately 30 miles of pipeline were surveyed. During FY88, the section expects to complete a leak-detection survey of all 265 miles of pipeline. In FY88 approximately 200 valves will be inspected and 75 leaks repaired.

During FY89, the Metropolitan Distribution staff will be intensifying distribution system maintenance activities by:

- o performing leak-detection survey of the entire 265 miles of distribution pipeline.
- o repairing 100% of leaks identified through inspection process.
- o inspecting 800 valves, equaling 25% of the total system.

- o repairing 100% of defective valves.

These activities will help to reduce unnecessary water loss, improve accountability of water usage, and enhance overall system operation.

Program Budget

The FY89 budget for this program is \$4.4 million, with nearly \$0.7 million of those costs allocated from the Office of the Director. A summary of the budget by line item is presented in Table 78.

Wages and Salaries

\$3.2 million in this line item represents the majority of the program budget. All increases in the direct wages and salaries for this program are due to wage increases and to the inclusion of temporary summer help. No new positions were added in FY89.

Overtime

The increase in this line item reflects wage rate increases and greater use of overtime due to the program's leak detection and repair efforts.

Utilities and Energy

This \$45,975 budget includes fuel oil (\$29,220) used for maintenance equipment and heating of the 25 buildings of the distribution system, and electricity (\$14,085) which is primarily used in the buildings.

Ongoing Maintenance

The following items are included in this budget:

Cleaning and grounds services and materials	\$ 19,000
Building materials (bricks, cement, roof shingles, etc.)	50,000
Paint, paint tools, small valves and burner services	12,500
Large diameter gate valves	40,000
Large diameter pipe clamps	40,000
Air valves	30,000
Leathers for regulating valves	5,000
Copper tubing and other materials	35,000
Welding services & emergency contracts	70,000

Valve locators, pipe locators, aqua scopes	13,000
Leak detection equipment	3,500
Rental of heavy construction equipment	<u>10,000</u>
Total	\$328,000

Professional Services

The FY89 budget of \$108,000 in professional services covers security costs for the leak detection crews. Police services are required to regulate and control traffic when the crews are at work.

Other Material

The major costs included in this line item are work clothes for 128 employees (\$51,200) and vehicle expense for the leak detection and maintenance crews (\$42,390).

Other Services

The \$48,000 in direct costs in this line item cover the rental of dumpsters and a trailer, telephones and a copy machine. Other costs are those allocated from the Office of the Director.

Table 78

DIVISION: WATERWORKS	METROPOLITAN AREA WATER DISTRIBUTION				
	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
EXPENSE LINE ITEM:					
WAGES AND SALARIES:	\$2,922,609	\$3,666,981	\$3,175,439	\$252,830	8.7%
OVERTIME:	93,861	111,610	111,406	17,544	18.7%
FRINGE BENEFITS:	329,497	418,422	349,284	19,787	6.0%
WORKERS' COMPENSATION:	57,298	58,003	56,058	(1,240)	-2.2%
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	44,827	53,325	45,975	1,149	2.6%
ONGOING MAINTENANCE:	298,138	372,854	345,870	47,731	16.0%
NEW MAINTENANCE:	61,150	0	0	(61,150)	-100.0%
EDUC, TRAIN, & MEETINGS:	8,563	12,160	10,643	2,079	24.3%
PROFESSIONAL SERVICES:	33,000	108,000	108,000	75,000	227.3%
OTHER MATERIAL:	111,100	132,163	131,898	20,797	18.7%
OTHER SERVICES:	78,703	75,699	69,444	(9,259)	-11.8%
PROGRAM TOTAL:	\$4,038,746	\$5,009,217	\$4,404,014	\$365,268	9.0%

Program: Meter Calibration and Repair/Pumping Station
Instrumentation Maintenance

Program Description

Metropolitan department workers are implementing a planned maintenance schedule for all 155 meters and appurtenant equipment that records the amount of water usage throughout the MWRA's waterworks system. This program includes the quarterly calibration or adjustment of 65 telemetric revenue meters, the repair and manual reading of 90 older mechanical meters, and the regularly scheduled maintenance of instrumentation equipment at the system's 10 pumping stations. During FY89, the MWRA will also begin installing new meters throughout the system.

Program Goals

- o to ensure the accuracy of all MWRA metering devices in order to:
 - improve the monitoring, tracking and accounting for water usage throughout the system;
 - assist the MWRA's leak detection and repair efforts; and,
 - provide accuracy of billing to the MWRA's user communities.
- o to keep the system's 10 pumping stations operating continuously by minimizing down time due to instrumentation failure.

Performance Objectives

During each of the past two years, the Metropolitan Department has intensified its efforts to achieve complete system-wide testing, adjustment and maintenance of all metering and pumping station equipment. Between FY87 and FY88, the Department increased its quarterly calibration from 10 percent to 50 percent of telemetric revenue meters and its weekly reading of older meters from 70 percent to 85 percent. In addition, the number of pumping stations receiving regular instrumentation maintenance was increased from zero to six.

For FY89, the Department is targeting:

- o scheduled maintenance of all metering devices and pumping station equipment.
- o weekly reading of 82 mechanical meters.
- o quarterly calibration of all 65 telemeters.
- o the regular annual maintenance of all 10 pumping stations.
- o training of 14 department staff members in specialized meter calibration and maintenance procedures.

Program Budget

In FY89, there is a \$1 million budget for the Meter and Pump Station Instrumentation Maintenance program. This includes \$0.9 million in direct costs. A summary of the amount budgeted by line item is presented in Table 79.

Wages and Salaries

In FY89, 4 new positions are approved for this program, bringing total personnel to 24 positions. The new positions are two Senior Instrument Technicians, one Instrument Technician, and an Electrician at a budgeted cost of \$66,769. The two Senior Instrument Technicians will work on the new telemetry meters, while the Instrument Technician and Electrician will work on the master meters and the revenue meters serving the contract communities. It is a goal of the Authority to ensure the accuracy of all MWRA metering devices, and specifically in FY89 to perform regularly scheduled maintenance on all meters and pumping station equipment.

Utilities and Energy

The electricity budget for this program reflects the transfer of fiscal responsibility of the new telemetry meters from the Distribution Program to Meter Maintenance.

Ongoing Maintenance

The following items are included in this line item:

Telemetry meter equipment	\$ 46,400
Meter instrument, repair, parts and labor	50,000
Small work equip., repair, parts and labor	2,000
Annual meter survey	8,000
Equipment rental	<u>2,500</u>
Total	\$108,900

New Maintenance

The following pieces of equipment are included in this line item, and are necessary to continue with interim meter installation:

Chessell chart recorders	\$ 12,000
Rustrak recorders	8,000
Moore Totalizers	<u>3,600</u>
Total	\$ 23,600

Education, Training and Meetings

In addition to \$6,500 for tuition reimbursement, this budget includes \$6,500 for seminars for Process Control Loop and Meter Repair.

Other Material

Set-up costs for the Rutherford Avenue Office along with work clothes for 24 persons and vehicle expenses constitute the major expenses budgeted in this line item.

Other Services

Telephone costs, budgeted at \$61,000, are necessary in FY89 to cover costs for leased telephone lines for the new telemetry meters. The remaining amount covers printing and duplicating and safety items.

Table 79

DIVISION: WATERWORKS	METER CALIBRATION AND REPAIR				
	PUMPING STATION INSTRUMENTATION MAINTENANCE				
	FISCAL YEAR		CHANGE BETWEEN		
EXPENSE LINE ITEM:	1988	1989	1989	FY88 AND FY89	%
	BUDGET	PROPOSED	FINAL	AMOUNT	
WAGES AND SALARIES:	\$447,685	\$643,719	\$620,778	\$173,093	38.7%
OVERTIME:	11,254	13,457	13,481	2,227	19.8%
FRINGE BENEFITS:	50,379	73,040	67,751	17,373	34.5%
WORKERS' COMPENSATION:	8,777	10,182	10,959	2,182	24.9%
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	0	32,900	39,060	39,060	N/A
ONGOING MAINTENANCE:	61,911	113,118	113,120	51,209	82.7%
NEW MAINTENANCE:	29,780	23,600	23,600	(6,180)	-20.8%
EDUC, TRAIN, & MEETINGS:	8,465	15,202	14,214	5,749	67.9%
PROFESSIONAL SERVICES:	0	5,000	5,000	5,000	N/A
OTHER MATERIAL:	50,483	45,780	45,787	(4,696)	-9.3%
OTHER SERVICES:	15,368	70,885	70,064	54,696	355.9%
PROGRAM TOTAL:	\$684,101	\$1,046,883	\$1,023,815	\$339,714	49.7%

Program: Water Transmission and Power Generation

Program Description

The Water Transmission and Power Generation Program of the Water Supply Department maintains and manages the operation of the MWRA's aqueduct system. Aqueducts convey water from several reservoirs to the distribution system for delivery to the MWRA's 46 user communities. The supply and transmission system consists of 70 miles of surface aqueducts, 38 miles of tunnels, three supply reservoirs, three distribution reservoirs, three emergency supply dams, 51 associated buildings and grounds, and more than 250 facility sites.

This program focuses on the ongoing maintenance of all aqueducts, pipelines and reservoirs to ensure continuous operation of the system and the uninterrupted delivery of water to more than 2.5 million MWRA consumers. Aqueduct maintenance includes surface activities such as clearing of vegetation and fence repairs; maintenance of the pipelines which involves checking valves, intakes and outlets; and internal inspection of the aqueducts. Reservoir operations include regulating water levels between the various supply reservoirs and seasonal cleaning and replacement of reservoir intake screens.

Another activity of the program involves the management of an internal hydro-power system that utilizes the water supply system for generation of electricity. The energy is sold to local public utilities, which brings in additional revenue to reduce water rates.

Program Goals

- o to ensure the uninterrupted delivery of water to all consumers in the MWRA system via a reliable, cost-effective transmission system.

Performance Objectives

To keep the water transmission system operating continuously at a high level of efficiency, Department personnel will be performing additional maintenance and inspection activities in FY89. These activities will include:

- o the clearing of 30 miles of aqueduct surface, compared to 10 miles planned in FY88.

- o the internal inspection of 25 miles of pipeline, increased from zero miles planned in FY88.
- o the uninterrupted transmission of 280 to 325 million gallons of water (range based on seasonal fluctuations).
- o the increase in hydro-power output by 10% in FY89, resulting in \$75,000 of additional revenue.

Program Budget

The FY89 budget for this program is \$3.8 million with \$0.6 million in allocated costs. A summary of the budget by line item is presented in Table 80.

Wages and Salaries

The increase of \$.3 million in this program is primarily the result of wage increases for union employees. For FY89 three new positions were approved for this program. They are: two Masons for the repair of the 350 transmission buildings; and a Data Control Coordinator to organize the hydro-power records, flow metering records and water quality records. The total FY89 cost of these new positions is \$40,844.

Utilities and Energy

The costs in this line item are split primarily between fuel oil and electricity for use in the operation of the aqueduct system. The electricity costs of this program are reduced by the internal use of electricity generated at the MWRA's hydropower stations. The proceeds from the sale of excess electricity generated at the stations reduces the MWRA's watershed reimbursement costs.

Ongoing Maintenance

The following items are included in the the proposed Ongoing Maintenance budget.

Grounds material and services	\$ 28,000
Building materials	15,000
Glazer, locksmith, metal fabricator	6,500
Packings, machine oil and miscellaneous hardware	7,500
Machinery services	13,000

Hoist replacement, cable, miscellaneous wire	1,500
Meter servicing and compressor servicing	8,800
Electrical supplies, scaffolding and staging	<u>8,000</u>

Total	\$ 88,300
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New Maintenance

\$150,000 of this line item is for materials and services for the first stage of a five year plan to replace fencing along the four major aqueducts.

Education, Training and Meetings

There is \$6,000 in this budget to cover tuition reimbursement and seminars and training.

Professional Services

The budget for this line item includes a \$5,000 oil spill contingency with an additional \$6,000 for scuba divers and electronic security services. The scuba divers are needed to repair valves and sluice gates and to conduct underwater inspections.

Other Material

Included in this line item are various office supplies (\$9,500), equipment (\$11,520), work clothes (\$48,000) and safety gear (\$12,000) for 120 employees.

Other Services

The \$58,200 of direct costs in this line item cover copy machine and word processing repairs (\$5,000), fire extinguisher maintenance (\$1,200), telephones (\$35,000), trailer rental at the Lake Cochituate Headquarters (\$15,000) and tool and equipment rental (\$2,000).

Table 80

DIVISION: WATERWORKS	WATER TRANSMISSION AND POWER GENERATION				
EXPENSE LINE ITEM:	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT	%
WAGES AND SALARIES:	\$2,449,880	\$3,089,890	\$2,757,803	\$307,923	12.6%
OVERTIME:	132,527	145,344	144,988	12,461	9.4%
FRINGE BENEFITS:	274,652	350,030	300,616	25,964	9.5%
WORKERS' COMPENSATION:	48,030	48,875	48,685	655	1.4%
CHEMICALS:	0	0	0	0	N/A
UTILITIES AND ENERGY:	64,750	66,455	60,955	(3,795)	-5.9%
ONGOING MAINTENANCE:	129,304	104,956	103,748	(25,556)	-19.8%
NEW MAINTENANCE:	12,000	155,500	155,500	143,500	1195.8%
EDUC, TRAIN, & MEETINGS:	13,537	12,030	10,544	(2,993)	-22.1%
PROFESSIONAL SERVICES:	2,500	11,600	11,600	9,100	364.0%
OTHER MATERIAL:	116,451	137,987	137,561	21,110	18.1%
OTHER SERVICES:	73,561	81,437	76,737	3,176	4.3%
DIVISION TOTAL:	\$3,317,193	\$4,204,104	\$3,808,738	\$491,545	14.8%

Program: Water Quality Assurance

Program Description

The Water Quality Assurance Program of the Water Supply Department encompasses a number of monitoring, testing, and treatment activities performed at regular intervals throughout the MWRA's water system. These activities include:

- state mandated disinfection through treatment with chlorine and anhydrous ammonia.
- continuous fluoridation of water supply.
- a reduction of Ph level of the water supply to prevent corrosion of lead from the MWRA communities and retail users.
- weekly algae testing and control in source reservoirs and more frequent testing during outbreaks.
- daily water quality testing for bacteria, and chemical contaminants.
- watershed sanitation surveillance in conjunction with the MDC; includes monthly inspection of all tributary streams.

Program Goals

- o to ensure the purity and quality of water delivered to all communities using the MWRA system.
- o to continually ensure that water delivered to all communities in the MWRA system meets or exceeds federal and state drinking water standards.

Performance Objectives

Water delivered to MWRA communities and contract users has met or exceeded federal and state drinking water standards every day during the past two years. The staff of the Water Quality Assurance program are working to continue this perfect record throughout FY89. To help achieve this objective, the Department will continue to increase the monitoring services it provides to communities in FY89 by:

- o performing 30,000 bacterial and chemical analyses.

- o performing 12,000 bacterial tests on samples brought to the MWRA labs by user communities.
- o performing tests required to detect all pollutants specified under the recently amended Safe Drinking Water Act.
- o performing daily tests on brooks and streams in the MWRA watersheds such that each geographic area is sampled monthly.

Program Budget

The FY89 budget for this program is \$3.5 million with \$0.4 million allocated from the Division and Department Director's offices. A summary of the budget by line item is presented in Table 81.

Wages and Salaries

This line item budget is \$1 million, of which \$.084 million are the direct costs of the 27 positions in this program. No new positions were added in FY89.

Chemicals

This line item increased by 123.8 percent due to the tripling of the cost of sodium hydroxide. The chemicals used by this program are for water treatment and testing and also include chlorine, anhydrous ammonia, hydrofluosilic acid and copper sulfate. Demand for the various chemicals was estimated based upon past usage.

Ongoing Maintenance

The following items are included for Ongoing Maintenance:

Cleaning and grounds materials and service	\$ 5,880
Plumbing and heating supplies	4,000
Electrical and electronic supplies	4,000
Hardware and pump and equipment parts	8,000
Services for chemical feed facility equipment	5,000
Service parts for chlorination equipment	9,000
Service for laboratory equipment	<u>4,000</u>

Total	\$ 39,880
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Other Material

The major costs in this line item are for laboratory equipment (\$18,000), work clothes (\$10,200) and vehicle expense (\$9,764). The remainder includes office and safety supplies and allocated administrative costs.

Table 81

DIVISION: WATERWORKS	WATER QUALITY ASSURANCE			
EXPENSE LINE ITEM:	1988 BUDGET	FISCAL YEAR 1989 PROPOSED	1989 FINAL	CHANGE BETWEEN FY88 AND FY89 AMOUNT %
WAGES AND SALARIES:	\$954,446	\$1,056,645	\$1,037,407	\$82,962 8.7%
OVERTIME:	41,064	43,908	44,559	3,496 8.5%
FRINGE BENEFITS:	108,459	121,289	114,627	6,167 5.7%
WORKERS' COMPENSATION:	18,712	16,714	18,314	(398) -2.1%
CHEMICALS:	970,738	999,930	2,172,843	1,202,105 123.8%
UTILITIES AND ENERGY:	0	0	0	0 N/A
ONGOING MAINTENANCE:	55,682	49,611	55,012	(670) -1.2%
NEW MAINTENANCE:	0	0	0	0 N/A
EDUC, TRAIN, & MEETINGS:	6,643	5,338	6,852	209 3.1%
PROFESSIONAL SERVICES:	64,000	5,000	5,000	(59,000) -92.2%
OTHER MATERIAL:	48,060	44,578	45,523	(2,537) -5.3%
OTHER SERVICES:	21,130	17,076	21,659	529 2.5%
DIVISION TOTAL:	\$2,288,934	\$2,360,088	\$3,521,796	\$1,232,863 53.9%

APPENDICES

APPENDIX A

Budget Policies

RATES POLICY

Basis of Authority Rates

The Authority is required by its enabling act to establish charges which, with other revenues, provide sufficient funds each year to pay all current expenses, debt service and obligations to the Commonwealth; to pay all costs of maintenance, replacement, improvements, extension and enlargement of the sewer and waterworks systems; to create and maintain reserve funds; and to provide amounts required by financing agreements. Those charges or rates are adopted by the Authority based on the rate revenue requirements set forth in the Current Expense Budget.

Costs Recovered

The Authority capitalizes certain of its asset costs in accordance with its capitalization policy. Capital expenditures are planned as set forth in the MWRA Capital Improvement Program and are recovered through rates in accordance with Authority financing agreements and policies for amortization of capital costs. The Current Expense Budget provides detailed information on capital and debt costs, additions to reserves and all operations and maintenance costs to be covered with current revenue.

Sources of Current Revenue

The Authority recovers virtually all of its current expenses from users of the services it provides. In addition to rate revenue requirements, budgeted current revenue includes anticipated fines, fees, investment income on certain operating and reserve fund balances, and payments for contracted services. The Authority is committed to seeking additional sources of current revenue.

Coverage Requirements

The Authority's financing agreements contain coverage requirements which provide that revenue less expenses must be more than the amounts required for debt service payments.

For FY89, the debt coverage requirement is 110% of annual debt service on debt outstanding as of July 1, 1988. Revenue raised to provide debt coverage shall be used either for amortization of capital costs or for capital expenditures.

Budget Surpluses

In any year in which current revenues exceed current expenses on a budget basis, the amount of over-recovery shall be applied first to previous years' budget based under-recovery, if any, and second toward the recovery of the Authority's pre-operating liability, if any. Any amount remaining shall be placed in a Rate Management Fund and used to offset current expenses in a subsequent year(s). Use of Rate Management Fund amounts shall be in furtherance of the Authority's rate making objectives, and the Authority will consult with the Advisory Board concerning their use.

Rate-Making Objectives

The Authority intends to follow prudent budgeting and rate-making practices. Rate-making objectives are:

1. To minimize total costs, consistent with the Authority's statutory responsibilities to provide effective, environmentally sound, wholesale water delivery and wastewater collection and treatment services;
2. To minimize the cost of debt by strengthening the Authority's position in financial markets;
3. To avoid single year rate spikes by prudent management of cost and rate increases, and
4. To support inter-generational equity by avoiding unfair rate burdens on either current or future rate payers.

Allocation of Costs and Revenue to Systems

Most of the Authority's current expenses are directly attributable to either water or sewerage service costs or to investment in either the water or sewerage system. Expenses which support both systems (indirect system costs) are allocated to water or sewer rates based on generally accepted cost allocation principals. Investment, contract and other income offsets water and sewerage expenses on either a direct or allocated, indirect basis. The resulting

net cost of water and sewerage services is the amount to be recovered through water and sewer rates.

Allocation of Rate Revenue Requirements to User Charges

Users of wholesale water and sewerage services provided by the MWRA are charged for those services in accordance with the Authority's water and sewer rate methodologies. Water is provided to most users at a flat rate per million gallons. Charges to users not governed by service contracts are based on volumes used during the most recent calendar year preceding the Authority's current fiscal year. Contract customers pay for their current usage at a price established by contract.

The cost of sewerage service is allocated to users based on population and the population equivalents of large, industrial users. Authority sewerage customers are provided with information showing the amount of current charges attributed to wastewater services used by large industries within each municipality. The Authority intends to consider alternative sewer rate methodologies when it has completed a metering program which will provide more precise measurement of wastewater volumes.

Schedule and Procedure for Rates Adoption

During the preparation of a proposed Current Expense Budget, required rate revenue is determined, and a preliminary calculation of the allocation of costs to user-specific charges is made. This information is provided to Authority customers in late February or early March to assist them in their own fiscal planning.

During March, April and May the proposed Current Expense Budget and preliminary charges undergo statutory review, including public hearings and review by the Authority's Advisory Board. Further refinements of projected expenses also occur during this period. A Current Expense Budget is adopted in June for the fiscal year beginning in July.

The budget adopted in June may differ somewhat from the proposed budget as a result of review and further refinement of the proposed budget. Water and sewer rate requirements and their allocation to users may thus change.

If the review and further analysis of a proposed current expense budget results in lower projected expenses or higher projected non-rate revenue, the Authority will consult with the Advisory Board concerning the disposition of resulting reductions in the proposed required rate revenue. Some or all of such savings from preliminary estimates of charges could be included in the adopted budget as additions to a Rates Management Fund and used to reduce rate requirements in the subsequent year or in several subsequent years. Alternatively, some or all of such savings could be used to reduce final charges to customers below preliminary estimates. Final charges adopted by the Authority will be sufficient to recover rate revenue requirements specified in the adopted budget.

It is an Authority objective to assist its customers in establishing full cost recovery systems at the retail level and to provide its users with information which allows for prudent municipal fiscal planning. In furtherance of this objective, it is Authority policy to avoid billing a customer more than the charges estimated in February. A customer's billed charges will be consistent with full recovery of Authority costs and with the policy on maximum customer billing. Any differences between adopted and billed charges will be included as an adjustment to the user's subsequent year's preliminary estimates and billed amounts.

Retail Rates

MWRA charges are for the Authority's provision of wholesale services. Local bodies which receive wholesale services in turn provide retail services to their users at the local level.

It is the policy of the Authority to encourage its customers to establish retail rates which:

1. recover the full cost of providing local water and/or sewerage services, including both direct costs and an allocation or estimate of indirect costs,
2. charge users of local water and/or sewerage services in a manner which demonstrates to customers that increased use of services results in increased user costs, and

3. comply with policies of the Authority directed to conservation of water, elimination of infiltration and inflow of surface water and ground water into the sewage collection, treatment and disposal system and removal or pretreatment of industrial wastes.
4. to the extent consistent with #1 and #2, provide assistance to low income users through lifeline rates.

Appendix B

MASSACHUSETTS WATER RESOURCES AUTHORITY
FY89 CAPITAL EXPENDITURE AMORTIZATION
(000'S)

PROJECT	RECOVERY PERIOD	WATER	SEWER	TOTAL
<u>ADMINISTRATION</u>				
EQUIPMENT	5	\$435	\$789	\$1,224
CHARLESTOWN HDQRTS.	4, 5, 10	525	524	1,049
FUTURE HEADQUARTERS	5	12	12	24
RADIO COMMUNICATIONS	5	141	142	283
VEHICLE MAINT.	15	8	9	17
MITIGATION	2		280	280
MGMT. SYSTEMS	3	27	26	53
MIS	10	512	512	1,024
ENGINEERING FEASIBILITY STUDY	3	46	46	92
HARBOR RESEARCH & MONITORING	5		40	40
SUB-TOTAL ADMINISTRATION		\$1,706	\$2,380	\$4,086
			\$1,049	
<u>WASTEWATER</u>				
SOUTHERN SYSTEM MODELING	15		\$33	\$33
WATERTOWN SIPHON	30		13	13
MILLBROOK VALLEY INTERCEPTOR	30		4	4
READING PUMP STATION	30		52	52
SLADE'S SIPHON	30		5	5
BELLE ISLE SIPHON	30		11	11
D.I. SLUDGE THICKENER REBUILDING	15		26	26
D.I. DIGESTER REHABILITATION	8		81	81
D.I. DUAL FUEL ENGINE/GENERATOR	15		173	173
D.I. ELECTRICAL UPGRADE	15		17	17
D.I. CHLORINATION FACILITY	2		1,173	1,173
D.I. OPERATION & CONSTRUCTION	3		319	319
D.I. ODOR MONITORING	5		69	69
D.I. INTERMEDIATE UPGRADE	6, 3		13	13
N.I. IMMEDIATE UPGRADE	8		40	40
N.I. INTERMEDIATE UPGRADE	7		7	7
INTERIM SCUM MANAGEMENT	5		155	155
CONSTITUTION BEACH CSO FACILITY	30		4	4
COTTAGE FARM & CHARLESTOWN CSO	15		32	32
SOMERVILLE MARGINAL REHABILITATION	15		91	91
SAFETY IMPROVEMENTS	10		135	135
SUB-TOTAL WASTEWATER			\$2,453	\$2,453
<u>WATERWORKS</u>				
LONG RANGE WATER SUPPLY STUDY	5	\$246		\$246
LOCAL SOURCES OF SUPPLY STUDY	5	269		269
ADDITIONAL WATER SUPPLY STUDY	5	20		20
RESERVOIR RISK ASSESSMENT STUDY	5	8		8
TRIGGER PLANNING	5	12		12
SAFE DRINKING WATER ACT STUDY	5	89		89
WACHUSETT BY-PASS TUNNEL STUDY	5	12		12
OAKDALE POWER STATION GENERATOR	20	30		30
SLUICE GATE REHABILITATION	30	11		11
MULTMAN-WESTON AQUEDUCT TRANSFER	20	198		198
ECHO BRIDGE REHABILITATION	20	18		18
NORUMBEGA RESERVOIR CHLORINATION	30	46		46
DISTRIBUTION SYSTEM MASTER PLAN	10	38		38
BOSTON LOW	5	75		75
HEATH HILL ROAD AND ROUTE 9 PIPE	30	3		3
NORTHERN INTERMEDIATE HIGH SERVICE	30	218		218
SPOT POND PUMP STATION	15	13		13
NORTHERN LOW SERVICE - SECTION 5	30	32		32
NORTHERN HIGH SERVICE - LYNN	30	112		112
NORTHERN HIGH SERVICE - REVERE PIP	30	48		48
GENERAL EDWARDS BRIDGE	30	3		3
DOMESTIC DEVICE RETROFIT PILOT	5	183		183
LEAK DETECTION SURVEY	3	567		567
ASBESTOS ABATEMENT PROGRAM	5	139		139
REHAB. OF EXISTING FACILITIES	10 - 30	179		179
SUB-TOTAL WATERWORKS		\$2,569		\$2,569
GRAND TOTAL		\$4,275	\$4,833	\$9,108



ACME
BOOKBINDING CO., INC.

JAN 28 1992

100 CAMBRIDGE STREET
CHARLESTOWN, MASS



